NOTICE OF FINAL RULEMAKING

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY -

AIR POLLUTION CONTROL

PREAMBLE

<u>1.</u>	Sections Affected	Rulemaking Action
	Article 18	New Article
	R18-2-1801	New Section
	R18-2-1802	New Section
	R18-2-1803	New Section
	R18-2-1804	New Section
	R18-2-1805	New Section
	R18-2-1806	New Section
	R18-2-1807	New Section
	R18-2-1808	New Section
	R18-2-1809	New Section
	R18-2-1810	New Section
	R18-2-1811	New Section
	R18-2-1812	New Section

The statutory authority for the rulemaking, including both the authorizing statute (general) <u>2</u>. and the statutes the rules are implementing (specific):

Authorizing Statutes: A.R.S. §§ 49-104(A)(1), (A)(10) and (B)(4), 49-425; 42 U.S.C. §§

7521(b), 7507; Massachusetts v. EPA, 127 S. Ct. 1438, 167 L. Ed. 2d 248 (April 2, 2007)

Implementing Statutes: A.R.S. §§ 49-447, 49-421(1), 28-955(D)

<u>3.</u> The effective date of the rules:

Sixty (60) days after submission to the Secretary of State.

4. A list of all previous notices appearing in the Register addressing the rules:

Notice of Rulemaking Docket Opening: 13 A.A.R. 4331, Dec. 7, 2007

Notice of Proposed Rulemaking, 14 A.A.R. 258, Feb. 1, 2008

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

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6. An explanation of the rules, including the agency's reasons for initiating the rules:

Summary. ADEQ is proposing to adopt a new Article 18 to implement the California Low Emission Vehicle program in Arizona, as permitted under the Clean Air Act sections 177 and 209.

Background. The 1970 federal Clean Air Act established tailpipe emission standards for new motor vehicles to curb emissions of carbon monoxide (CO), volatile organic compounds (VOC) and oxides of nitrogen (NOx). These standards took effect for cars and light duty trucks in 1975. section 209(a) of the Act preempted the states from adopting their own emission standards for new vehicles but granted California authority to enact stricter standards, if the state obtained a waiver of preemption from the Environmental Protection Agency (EPA).

The 1977 federal Clean Air Act Amendments tightened the NOx standard for cars in two phases: 1977 through 1979 and 1981. EPA revised the federal standards for light-duty trucks in 1979 and 1988, and set

rules for heavier trucks in 1988. section 177 of the Act allows other states to adopt California's standards, rather than the federal ones, while prohibiting the states from adopting their own. A state may adopt California's standards if they are identical to California's, and the state adopts these standards at least 2 years before they become effective. Thus, in the United States there are two federally-sanctioned motor vehicle control programs: the federal program and the California program.

The 1990 Clean Air Act Amendments lowered the NOx emissions standards for vehicles starting in 1994. These standards are commonly referred to as the Tier 1 standards, and they resulted in a 40 percent reduction in tailpipe NOx emissions from the prior federal program (the federal motor vehicle control program).

In 1998, EPA, vehicle manufactures and the Northeastern and Mid-Atlantic states forged a voluntary agreement to introduce cleaner vehicles. This was called the NLEV program and was patterned after the California program in place at that time. The first NLEVs were available in Northeast and Mid-Atlantic states beginning with model year 1999 vehicles, and the rest of the country in model year 2001. Compared with the Tier 1 standards, the NLEV program reduced NOx emissions by 50 percent for cars, and 17 percent for light trucks. In 1999, EPA promulgated the motor vehicle Tier 2 emission standards starting with model year 2004 vehicles. The Tier 2 program further reduced the NOx emission standards by between 77 and 86 percent in cars and between 92 and 95 percent in trucks, compared with the NLEV program. The Tier 2 program also gave a manufacturer the flexibility to average emission reductions across its fleet to meet the emission standards. Vehicles sold in any state that has not adopted the California program must meet the Tier 2 standards.

In 1991 the California Air Resources Board (CARB) adopted its Low Emission Vehicles (LEV) program, which applied to model year 1994 through 2003 passenger cars, light-duty trucks, and medium-duty vehicles. For each model year, a manufacturer could choose how many of each type of LEV to manufacture, provided that the manufacturer's entire fleet of vehicles met a specific fleet average non-methane organic gas (NMOG) emissions level. The program also required each manufacturer to include in its fleet of vehicles a certain percentage of Zero Emission Vehicles (ZEVs) starting in 1998.

In 1998, CARB amended the LEV program to tighten and extend the NMOG fleet average to heavier sport utility vehicles and light trucks, and to provide more flexibility in meeting the ZEV requirement by creating Partial Zero Emission Vehicle (PZEV) credits for passenger cars and light-duty trucks that

achieve near zero emissions, and passenger cars and light-duty trucks using advanced technologies. Advanced technology PZEVs are known as ATPZEVs. To achieve compliance with the ZEV sales mandate, manufacturers could use credits earned from the sale of PZEVs or ATPZEVs.

In addition to these strict standards limiting criteria pollutants, growing public concern over observed increases in temperature and extreme weather events, and increasing scientific consensus on their cause, prompted the California Assembly to develop AB 1493. This legislation, signed into law on July 22, 2002, by Governor Gray Davis, directed CARB to develop regulations to achieve the maximum feasible reduction in GHGs from vehicles. These regulations, called the Pavley standards after the legislative sponsor, set a declining fleetwide average for GHGs beginning with model year 2009 and established a flexible compliance scheme with credit banking and trading. The full Board approved the regulations September 24, 2004, and applied to the U.S. EPA for a waiver in December 2005. A full discussion of greenhouse gases (GHGs) sources and impacts is included in section C.

In 2005, CARB added a greenhouse gas fleet average emission requirement similar to the NMOG requirement. EPA found that this new standard did not fall within the scope of California's original Clean Air Act section 209 waiver, thus requiring California to submit a separate waiver request specifically for this new greenhouse gas requirement. The EPA Administrator denied this waiver request in a December 19, 2007, letter to Governor Schwarzenegger and published the denial in the Federal Register on March 6, 2008 (73 Fed. Reg. 12156). California filed a petition for review against EPA on January 2, 2008, in the Ninth Circuit Court of Appeals to overturn this decision. Fifteen states, including Arizona, and five nonprofit organizations have filed motions to intervene in support of California's petition. It is also possible that Congress will amend the Clean Air Act to reverse EPA's decision.

Twelve other states have adopted the California program: Connecticut (Conn. Admin. Code § 22a-174-36a), Maine (06 Code of Maine Rules § 127), Maryland (Code of Md. Regs. § 26.11.34), Massachusetts (310 Code of Mass. Regs. 7.40), New York (6 NY Code, Rules & Regs., Part 218), New Jersey (NJ Admin. Code §§ 7:27-29), New Mexico (20 NM Admin. Code, Chapter 2, Part 88), Oregon (Or. Admin. Rules § 340-257), Pennsylvania (25 Penn. Code § 126.411, Subpart D), Rhode Island (RI Air Poll. Ctrl Regs. 37), Vermont (Vt Air Poll. Ctrl Regs., Subchapter XI) and Washington (Wash. Admin. Code § 173.423). Colorado, Florida, Montana and Utah also have announced their intention to adopt the California standards.

In response to growing concerns over the issue of greenhouse gases and their effect on climate change, Governor Napolitano established the Arizona Climate Change Advisory Group (CCAG) to develop recommendations for reducing greenhouse gas emissions in Arizona. The CCAG unanimously recommended adoption of the California standards in Arizona. In September 2006, in response to the CCAG's recommendations, the Governor signed Executive Order 2006-13. Among other actions, the Order directed ADEQ to adopt and implement the California Clean Car Program to reduce greenhouse gas emissions from passenger vehicles.

Section by Section explanation of proposed rules:

Article 18

R18-2-1801 This section lists the definitions applicable to Article 18, and includes, in the root

paragraph, definitions from A.R.S. § 49-401.01 and the applicable definitions from Title 13 of the California Code of Regulations (CCR), incorporated in R18-2-1803. Of particular note, this section defines "an affected vehicle" as any passenger car, light duty truck or medium duty vehicle with 7,500 or fewer miles

on its odometer.

R18-2-1802 This section details the applicability of the rules of Article 18, from general

requirements to more specific applicability of certain sections of the Article to particular entities. All persons, other than those excepted in subsection (D), require CARB certification in order to deliver for sale, offer for sale, sell, import, deliver, purchase, rent, lease, acquire, receive, or register an affected vehicle with

a model year of 2012 or later.

R18-2-1803 This section incorporates by reference the applicable sections of the California

Code of Regulations necessary to implement the rules of this Article.

R18-2-1804 This section establishes the Non-methane Organic Gas (NMOG) fleet-wide

average exhaust emission limit, a weighted average of the emissions for all of the

passenger cars and light-duty trucks a manufacturer delivers for sale during the

specified model year, beginning in model year 2012. Each manufacturer would

be required to demonstrate that all of its passenger cars and light-duty trucks

delivered for sale in Arizona for model year 2012 or later, meet an average

emission standard for NMOG, as detailed in CCR, Title 13, section 1961,

incorporated in R18-2-1803.

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R18-2-1805

This section establishes the Greenhouse Gas (GHG) fleet-wide average exhaust emission standards, similar to the NMOG fleet average requirements detailed in R18-2-1804. Each manufacturer would be required to demonstrate that all of its passenger cars and light-duty trucks delivered for sale in Arizona meet an average emission standard for GHG, as detailed in CCR, Title 13, section 1961.1, incorporated in R18-2-1803. In light of the EPA decision denying California's request for a section 209(b) waiver for the GHG standards and the possibility that the federal courts or Congress will reverse the decision, this section conditions adoption of the GHG standards on such a reversal.

R18-2-1806

This section would require each manufacturer to comply with a ZEV sales requirement identical to California's. (See CCR, Title 13, section 1962, incorporated in R18-2-1803.) The ZEV sales requirement would be based on total vehicle sales in Arizona, and would commence with model year 2012 passenger cars and light-duty trucks produced and delivered for sale in Arizona on or after January 1, 2011. The ZEV sales requirement allows manufacturers to choose between two compliance paths. The conventional path requires the manufacturer to place in service (that is, to sell to an ultimate purchaser) in Arizona a certain number of ZEVs, which number is based upon the number of passenger vehicles and light-duty trucks that the manufacturer delivers for sale in the State. The second or "alternative compliance" path allows manufacturers to meet the entire ZEV mandate with a combination of ZEVs, ATPZEVs and PZEVs.

R18-2-1807

This section would establish a ZEV Credit Bank, which would allow a manufacturer to earn and bank vehicle equivalent credits for any ZEV, ATPZEV or PZEV it delivers for sale in Arizona on or model year 1999. The manufacturer may use its credits at a later date to comply with the ZEV sales requirement detailed in R18-2-1806. The proposed ZEV Credit Bank would allow a manufacturer to bank, acquire from another manufacturer, and use credits in the same manner as the California program.

R18-2-1808

This section details manufacturers' reporting requirements in addition to those established in other sections of this Article.

R18-2-1809

This section applies California's emissions warranty requirements for new Low Emission Vehicles, which are incorporated by reference in R18-2-1803. The

	warranty requirements would apply to all passenger cars and light-duty trucks for
	which the manufacturer is claiming early ZEV credits, and to all qualifying
	vehicles delivered for sale in Arizona for model year 2012 or later.
R18-2-1810	This section would make any enforcement action resulting in a recall of any
	vehicles in California prima facie evidence of noncompliance for applicable
	vehicles registered in Arizona, and extend such recall campaigns to Arizona-
	registered vehicles, unless the manufacturer can demonstrate that the recall
	would not be applicable in Arizona.
R18-2-1811	This section would allow the Department to inspect vehicles and records, and
	require documentation from appropriate parties to determine compliance and
	help facilitate enforcement of the rules of this Article.
R18-2-1812	This section clarifies how the Department's civil enforcement authority under
	A.R.S. § 49-463 applies to violations of the Article.

7. A reference to any study relevant to the rules that the agency reviewed and either relied on in its evaluation of or justification for the rules or did not rely on in its evaluation of or justification for the rules, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

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8. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

A. Rule Identification

This rule comprises new Article 18, sections R18-2-1801 through R18-2-1812, entitled "Clean Car Standards." The rule implements the California Low Emissions Vehicle (LEV II) program in Arizona, creating more stringent requirements for motor vehicle emissions than the federal Tier II standards promulgated by EPA in 1999 that currently apply to model year of 2004 or later vehicles sold in Arizona.

B. Executive Summary

ADEQ expects the Clean Car Standards to reduce emissions of non-methane organic gases (NMOG), carbon monoxide, nitrogen oxides (NO_x), and greenhouse gases (GHG) from light- and medium-duty

passenger vehicles and light-duty trucks. These rules will apply to vehicles beginning with the 2012 model year.

Governor Janet Napolitano issued Executive Order 2006-13 in September 2006 to begin implementing the recommendations in Arizona's Climate Change Action Plan. The Climate Change Action Plan was produced by the Arizona Climate Change Advisory Group (CCAG). Appointed by the Governor, the CCAG comprised diverse group of 35 stakeholders from diverse backgrounds who brought broad perspective and expertise to the topic of climate change in Arizona. Members represented the following sectors: electric power generation, fossil fuel industry, manufacturing, mining, agriculture, forestry, construction and building, tourism and recreation, heath care, non-governmental organizations, Indian tribes, state and local government, and the general public. The CCAG developed 49 policy recommendations to reduce GHG emissions in Arizona.

The CCAG held its first meeting on July 14, 2005, followed by a year of intensive fact-finding and consensus building, facilitated by the Center for Climate Strategies (CCS). The CCAG held six public meetings during this period. Five sector-based technical work groups (TWGs) held a total of 40 public meetings. Members of the public were invited to speak and present information at all CCAG and TWG public meetings.

The Transportation and Land Use Technical Work Group (TLU TWG) met a total of eight times between Aug. 31, 2005 and May 3, 2006. The TLU TWG was the forum in which the CCAG developed and analyzed the State Clean Car Program policy option (TLU 1). A representative of the Automobile Industry attended the TLU meetings as a member of the public, and in fact, attended the last five of the eight TLU meetings that were held. Moreover, a representative of the Automobile Industry attended two of the six CCAG meetings, on Dec. 12, 2005, and May 16, 2006, at which the CCAG voted unanimously to include the State Clean Car Program policy option as a recommendation in the Climate Change Action Plan.

The recommendations adopted by the CCAG underwent two levels of screening. First, a potential policy option being considered by a TWG was accepted as a "priority for analysis" and developed for full analysis only if it had a supermajority of support from CCAG members (with a "supermajority" defined as five or fewer "no" votes or objections). Second, after the analyses were conducted, only policy options that received at least majority support from CCAG members were adopted as recommendations by the CCAG and included in this report.

Of the 49 policy recommendations adopted by the CCAG, 45 received unanimous consent, two (2) received supermajority support, and two (2) received majority support. The recommendation to implement the California Clean Car Program in Arizona was adopted unanimously by the CCAG.

The CCAG measures, taken together, will achieve Arizona's climate change goal: to reduce GHG emissions to year 2000 levels by 2020, and 50 percent below the year 2000 levels by 2040. Executive Order 2006-13 specifically directed adoption of the California Clean Car Standards, a recommendation that received unanimous support from the CCAG.

The Clean Car Standards establish tailpipe and fleet-wide emission limits for new passenger cars, light-duty trucks and medium-duty passenger vehicles. Beginning in model year 2012 under R18-2-1802, "no dealer or other person within this State shall deliver for sale, offer for sale, sell, import, deliver, purchase, rent, lease, acquire, receive, or register an affected vehicle of model year 2012 or later unless the vehicle has been certified by CARB and has received a CARB Executive Order."

An "affected vehicle" means any passenger car, light duty truck or medium duty vehicle with 7,500 miles or fewer on its odometer, provided that a vehicle sold by a dealer is an affected vehicle if it had 7,500 miles or fewer on its odometer statement at the time the dealer acquired the vehicle that does not qualify for any of the exemptions under A.A.C. R18-2-1802 (D).

ADEQ expects this rulemaking to impact the following entities: motor vehicle manufacturers; auto dealers, wholesalers, brokers, and individuals selling affected vehicles; consumers purchasing these vehicles; gasoline stations; gasoline distributors; fuel producers; businesses selling goods and services; consultants; vendors; repair facilities; the general public; insurance sector; Arizona Department of Environmental Quality (ADEQ); Arizona Department of Transportation Motor Vehicle Division (MVD); State Government (revenues); and political subdivisions of the State.

As the standards are phased in, consumers should expect to pay higher prices for vehicles subject to this rulemaking. These costs will be offset, however: (1) because the reduced operating costs of these vehicles are expected to outweigh their higher prices; and (2) reduced operating costs will result in expenditures for other goods and services in the economy. To the extent that some sectors of the economy face negative impacts, such as fuel producers, distributors and retailers, such reduction in

economic output should be more than offset through growth of consumption, income, and employment in other sectors of the economy (CARB, *Technical Support Document for Staff Proposal Regarding Reductions of Greenhouse Gas Emissions from Motor Vehicles: Economic Impacts of the Climate Change Regulations*, August 6, 2004).

The consumer is expected to benefit from reduced operating costs. ADEQ expects this rulemaking to provide public health and environmental benefits as well.

C. Background

Controlling emissions from the transportation sector through the Clean Car Standards is important for Arizona to achieve and maintain existing national air quality standards, reduce emissions of greenhouse gases, mitigate future climate change, and adapt to the future challenges from a changing climate. The complete Clean Car Standards will benefit Arizona by directly reducing criteria pollutant emissions from individual new vehicles, setting pollution limits for the new vehicle fleet; spurring research, development, and commercialization of low- and non-polluting technologies, and contributing significantly to state and regional GHG reduction goals.

The LEV II Standards

Motor vehicles are a significant source of conventional air pollutants that harm public health and the environment, particularly precursors of ozone pollution and carbon monoxide (Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 24*, 2004, 12-4). The most recent emissions inventories for the Phoenix metropolitan areas show that motor vehicles are responsible for approximately two thirds of the carbon monoxide pollution, two thirds of the anthropogenic oxides of nitrogen emissions (ozone precursor), one third of the anthropogenic volatile organic compound emissions (ozone precursor) (Maricopa County Air Quality Department. 2004. 2002 Periodic Emissions Inventory for Carbon Monoxide for the Maricopa County, Arizona, Nonattainment Area (June), and 2002 Periodic Emissions Inventory for Ozone Precursors for the Maricopa County, Arizona, Nonattainment Area (June)). The Clean Air Act allows states two options to regulate vehicle emissions: the federal standards or stricter California standards. As stated before, these regulations would apply the stringent California standards that have already been approved and implemented in many other states to new vehicles sold in Arizona.

Reducing pollution beyond the federal program is important to meet stricter federal air quality standards for ozone announced by the EPA Administrator on March 12, 2008, especially in light of Arizona's rapid growth in both population and vehicle use. Further reductions from the transportation sector are also important to meet other commitments under the Clean Air Act, including reduction in regional haze.

Arizona's current air quality problems are directly connected to the rapid population growth and related activities the state has experienced. While population will grow at a fairly constant rate, the growth in vehicle miles traveled (VMT) will increase even more rapidly. This occurs because most of the growth in population occurs at the fringes of urban areas, while many employment centers tend to stay concentrated in the urban center, leading to increasing commuting distances. There will be greater demand for vehicle travel and supporting infrastructure, which will in turn create more pollution through expanded and extended roadways and more vehicles traveling longer distances. Studies have shown that the growth trends of both population and VMT can erase technological improvements in emission controls under the federal regulations. (Keyes, D., D. Anderson, C. McKaughan, and H. Eyrich. 2001. "Estimating the costs of violating air quality standards." *EM: Air and Waste Management Association's Magazine for Environmental Managers*, April, pp. 22-30.) Details of the health and environmental effects of this regulation are discussed more fully in section E.

The Greenhouse Gas Standards

These proposed rules were developed under Executive Order 2006-13 on climate change, issued in 2006 by Governor Janet Napolitano. The CCAG unanimously recommended that Arizona implement the Clean Cars Standards to reduce GHGs from the transportation sector. GHG emissions increased nearly 57 percent in Arizona between 1990 and 2005, compared to 22 percent for the entire U.S. (CCAG, *Arizona Climate Change Action Plan*, E2; 30). It is estimated that at least 40 percent of the GHG emissions were from vehicles. Carbon dioxide was the dominant gas emitted. Managing and reducing GHGs from the transportation sector is crucial to Arizona's climate change mitigation and adaptation strategy.

Theory and Evidence of Climate Change

Energy from the sun drives the earth's climate. It is maintained by complex interactions between the atmosphere, the oceans, and the reflectivity of the earth's surface. As the sun's rays reach the earth, the

energy is either reflected back into space or it is absorbed by the earth and subsequently reemitted into the atmosphere. Certain gases—in particular carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons, and sulfur hexafluoride—trap the sun's energy in their bonds. Through a property called radiative forcing, this heat is maintained within the upper atmosphere and causes a warming effect in the atmosphere, the so-called "greenhouse effect." (Intergovernmental Panel on Climate Change [IPCC], *The Physical Science Basis*, 2007, 131). Radiative forcing is caused naturally by increases in solar radiation and natural GHG emissions. However, these factors only account for a small fraction of the documented warming that has occurred in the past decades (IPCC, *The Physical Science Basis*, 2007, 192).

Significant scientific consensus and robust data support the claim that substantial increases in atmospheric concentrations of GHGs are significant contributors to observed increases in mean global surface temperature and corresponding changes in climate. The Intergovernmental Panel on Climate Change (IPCC), a group comprised of hundreds of scientists in dozens of countries, issues assessment reports every five years reflecting the state of knowledge from thousands of peer-reviewed scientific studies. In its most recent assessment report, issued in February 2007, IPCC reports that concentrations of CO₂ have increased from a pre-industrial value of 280 ppm to 379 ppm in 2005. (IPCC, *The Physical Science Basis*, 2007, 131). Combined with increased concentrations of other GHGs (principally methane), the atmospheric concentration is equivalent to 430 ppm CO₂ (Sir Nicholas Stern, *Economics of Climate Change*, 2006, iii). Greenhouse gas concentrations have increased 53 percent from pre-industrial levels, a rise that is highly correlated with observed changes in temperature and extreme weather events. Since 1750, it is extremely likely (a 95 percent confidence interval) that humans have exerted a substantial warming influence on climate (IPCC, *The Physical Science Basis*, 2007).

The IPCC has also found that, in the areas studied over the past fifty years, the frequency of extreme weather events like heavy precipitation, drought, and tropical storms and hurricanes, has increased, though to varying degrees, across regions. Since 1970, the number of category 4 and 5 hurricanes has increased about 75 percent (IPCC, *The Physical Science Basis*, 2007, 308).

Researchers at the University of Arizona have documented less winter snowfall, increased winter rainfall, and earlier snow melt resulting in reduced stream flow and more extensive, stronger forest fires (G. Garfin and M. Lenart, "Effects on Southwest Water Resources," *Southwest Hydrology*, volume 34, January/February 2007, 16-17, 34; A.L. Westerling, H.G. Hidalgo, D.R. Cayan, T.W. Swetnam,

"Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity" *Science*, volume 313, August 2006, 940-943).

Potential Impacts of Climate Change

Climate change poses serious risks to Arizona's air, water, and land that could result in substantial public health, environmental, and economic damage. The most pronounced effect of climate change on Arizona would be higher surface temperatures that could set off a cascade of further effects. As documented below, climate change is expected to cause more direct and indirect air pollution, more frequent and extensive fires, more heat waves, stronger storms, more flooding, earlier snow melts, greater water consumption, rising sea levels and reduced stream flows.

Climate change is projected to increase temperatures in the desert Southwest by 3.6 to 9 degrees Fahrenheit, with extreme scenarios suggesting up to 14 degrees of warming before the end of the century (CCAG, *Climate Change Action Plan*, 27). Higher temperatures will cause greater evaporation of water, changing precipitation and affecting climates. Especially vulnerable in Arizona are alpine regions, rangelands, lakes and reservoirs, riparian regions, the Sonoran desert, and urban areas. (Lenart, *Global Warming in the Southwest*, 2007) Because so much of Arizona's economy and quality of life are tied to the natural surroundings, these changes would severely impact both natural and human systems.

Water resources are always a concern in Arizona's arid environment. Climate change could reduce water resources in the Colorado River basin significantly, including a 15 percent reduction in annual runoff, a 40 percent decrease in basin storage, and a decline in hydroelectric power production of 45-56 percent. (CCAG, *Climate Action Plan*, 27) If this generation were supplemented by conventional generation, it would put even greater strains on water resources at the same time that demand increases due to the same temperature changes. Researchers at Arizona State University have shown that a one degree Fahrenheit increase in daily low temperature results in an additional 290 gallons of water consumed per month. (S. Guhatahakurta and P. Gober, "The Impact of Phoenix Urban Heat Island on Residential Water Use," *Journal of the American Planning Association*, vol. 73, issue 3, 317-329, September 2007)

Air quality will also suffer as a result of climate change. Energy consumption will rise with higher temperatures, especially in the already hot, arid environments of Arizona. This will increase fine

particulate and other emissions from power generation. Besides the increased risk of wildfires from diminished water resources, climate change is also predicted to increase coarse particulate matter emissions. Furthermore, secondary ozone formation would increase as a result of the higher temperatures, increased biogenic emissions and the effect of higher ground-level CO₂ emissions (Swetnam and Westerling, Senate testimony, September 24, 2007; Tom Moore, presented at EPA workshop "Integrating Climate Change Adaptation into Air Quality Decision Making, December 5, 2007; M.Z. Jacobson, "On the Causal Link between Carbon Dioxide and Air Pollution Mortality, *Geophysical Research Letters*, vol 35, 2008). Projected climate change would profoundly impact Arizona's natural and human-built environments. Researchers at the University of Arizona have identified particular threats to lakes and reservoirs, irrigated and pastoral agricultural lands, forests and mountaintops, riparian habitats the Sonoran desert, and even urban environments as a result of climate change (University of Arizona, Climate Assessment of the Southwest: *Global Warming in the Southwest: Projections, Observations, and Impacts*).

These effects will in turn result in a significant increase in insured losses. Average global temperatures have increased over the past century and are expected to continue to rise over the next century. Scientific assessments anticipate warmer temperatures that will alter the frequency or severity of damaging weather-related events, such as flooding and drought. Further increases in the earth's temperature are very likely to increase the frequency and severity of many damaging weather-related events, such as increased drought across many regions of the globe, including the Great Plains of the U.S. In addition, the intensity of precipitation events is very likely to increase across almost all regions of the world. It is likely that the future holds increased summer drying and associated risks of drought, increased hurricane peak wind intensities and increased hurricane average and peak precipitation intensities (U.S. Government Accountability Office, *Climate Change: Financial Risks to Federal and Private Insurers in Coming Decades Are Potentially Significant*, Report to the Committee on Homeland Security and Government Affairs, U.S. Senate, March 2007, 8-9).

Climate change is a global problem and poses risks far beyond Arizona. Its implications also reach far beyond the historical ambit of environmental regulation, creating alarming vulnerabilities to international trade, economic growth, and national security. Projections are that sea levels could rise by the next century, flooding coastal cities and destroying transportation infrastructure. Climate change is also a risk for global security, with reduced access to fresh water from precipitation changes, in turn impairing food production; health catastrophes from the spread of vector-borne diseases; mass migration due to flooding

of coastal cities and displacement of their residents (CNA Corporation, *National Security and the Threat of Climate Change*, 12-16).

Climate Change Mitigation

Thousands of academic studies have estimated the geophysics, ecology, economics, and policy implications of climate change. The scientific consensus suggests that, in order to limit the worst effects of climate change, atmospheric concentrations of CO₂ should be limited to around 500 ppm (Charles Kutcher, *Tackling Climate Change in the US*, 3; IPCC, *Synthesis Report: Summary for Policy Makers*, 2007, 20; Stern Review, x). The Stern Review Report suggested that, if left unchecked, climate change could cause a 20 percent decrease in global GDP by the end of the century, whereas taking early and aggressive action to mitigate GHG emissions now would only cost about 1 percent of GDP. (Stern, 2007, xiii)

While this regulation alone will not substantially reduce or reverse ongoing global climate change, it is inconceivable that those reduction targets could be achieved without actors like the state of Arizona undertaking reductions like this. Furthermore, this policy is not being advanced in isolation. The Clean Car Standards link with other regulatory and market-based initiatives to reduce GHG emissions across all sectors of the economy. Twelve states, representing over 35 percent of the U.S. population, have adopted the Clean Car Standards and more states are in process. With adoption of the standards by Arizona and the other three states that have proposed adoption, the Clean Car Standards will cover about 46 percent of the U.S. population. These state-level actions are in addition to aggressive measures by other nations to reduce GHG emissions from automobiles (An and Sauer, *Comparison of Passenger Vehicle Fuel Economy and Greenhouse Gas Emission Standards around the World*, 25).

Climate Change Adaptation

Adopting the Clean Car Standards will not only help mitigate GHG emissions and future climate change, the savings generated for consumers will allow resources otherwise spent on fuel to go toward other adaptive strategies. These standards will require automakers to manufacture vehicles that emit 30 percent less GHGs by 2016. By 2020, the twelve states, besides California, that have already adopted the Clean Car Standards would reduce 434 million MTCO₂e (metric tons carbon dioxide equivalent), 89 percent

more than under the federal program (CARB, Comparison of GHG Reductions for the US and Canada under US CAFE Standards and CARB GHG Regulations, February 25, 2008, vii).

Arizona's program consists of three parts: (1) Low-Emission Vehicle (LEV) standards for emissions of smog-forming and toxic pollutants; (2) Zero-Emission Vehicle (ZEV) standards that promote advanced technology vehicles (e.g., hybrids, fuel-cell vehicles, and electric vehicles) and (3) GHG emission standards that limit emissions of pollutants that contribute to global warming. As noted elsewhere in this preamble, EPA has issued a notice of disapproval of California's request for a waiver under section 209(b) of the Clean Air Act for the GHG emission standards. The costs and benefits of the GHG emission standards, as described below, are contingent on a reversal of EPA's decision.

E. Cost-Benefit Analysis (potential direct impacts)

The costs of this regulation will be borne primarily by those who produce and purchase vehicles. The direct benefits will primarily accrue to users through reduced operation and maintenance costs and to society generally through reduced public health risks. The higher prices consumers will have to pay for new vehicles will be offset by a savings in operating costs. Thus, ADEQ expects that a net benefit will accrue to consumers in the State. This section provides information and data about potential costs and benefits of implementing this rulemaking. ADEQ expects probable benefits of implementing this rulemaking to outweigh probable costs.

1. Health and Environmental Impacts

ADEQ's evaluation of emission reductions projected that by implementing the LEV II program, 2018 emissions in the State will be lower than the federal Tier II control by 892 tons of NMOG, 5,505 tons of CO, and 1,436 tons of NO_x. These projections are based on approximately 86.7 billion projected vehicle miles traveled using emission factors in EPA's MOBILE6 model. More than 58 percent of these VMT are predicted to occur in the metropolitan Phoenix area, where population density and the dynamics of air pollution formation may yield nonlinear benefits. Two-thirds or more of the reductions in NMOG, CO, and NO_x are projected to occur in Maricopa, Pima and Pinal Counties combined. These projections do not reflect potential reductions in upstream emissions from avoided petroleum extraction, refining, transportation and storage.

Under revisions to the ozone NAAQS announced by EPA on March 12, 2008, four counties in Arizona (Maricopa, Pima, Pinal and Gila) may be designated ozone nonattainment areas in the future. The reductions in ozone precursor emissions achieved by the LEV II standards may therefore prove critical in reaching the new ozone standard of 0.075 parts per million (ppm), which is more protective of human health than the previous standard of 0.084 ppm.

Since vehicles are a major contributor to air pollution, a minimal to moderate reduction in tailpipe emissions will help improve air quality in Arizona. The new vehicles complying with these standards will produce lower emissions of ozone-forming pollutants and cancer-causing hazardous air pollutants that lead to acute and chronic health endpoints. In urban areas with increasing vehicle miles traveled and daily traffic congestion, even a minimal reduction in tailpipe emissions will reduce exposure to urban residents, thereby having the potential to reduce illness and premature death. ADEQ expects residents in rural areas also to experience a reduction in exposure. According to the American Lung Association (2004), vehicle-related pollutants are associated with thousands of cases of chronic respiratory illness and cardiovascular problems in the U.S.

Arizona is projected to have a 2011 population of 7,186,070. By 2020, the state's population is expected to grow to 8.8 million; 11.7 million by 2040 (Arizona Department of Economic Security, "Arizona Population Projections 2006-2055," March 31, 2006). In addition to net immigration to Arizona, births contribute about 104,000 annually, with a birth rate second to Texas' birth rate (U.S. Census Bureau). With the projected population growth of Arizona, pediatric and adult cases of asthma are expected to increase, with rates compounded in the more urbanized areas.

Because sensitive subpopulations of the State are disproportionately affected by air pollution, they may experience greater benefits from the stricter emission standards. Subpopulations include infants and the elderly, persons with pre-existing lung diseases (e.g., cardiopulmonary diseases, asthma), and individuals with congenital defects. Compounding and synergistic effects from multiple air pollutants could pose special risks to these sensitive subpopulations.

Asthma is a chronic inflammatory disorder of the respiratory passages. According to the Arizona Department of Health Services (1998), 8.9 percent of the State's population suffered from breathing

discomfort or asthma. At that time, however, the population of the State was just over 3.5 million. If that same rate applies, by 2011 more than 639,000 persons would be classified as having asthma or a breathing disorder. Since the consumption of gasoline and diesel by vehicles is a major cause of air pollution, any policy to reduce tailpipe emissions should have a positive impact on human health.

Metropolitan Phoenix, ranked as the fifth largest U.S. city, is one of the top five U.S. cities for asthmarelated mortality. There also is spatial variability in asthma hospitalization and emergency room rates. For example, the ZIP codes with the highest rates of asthma have rates that are 15-18 times higher than ZIP codes with the lowest rates. The highest rates for emergency room visits occurred in downtown Phoenix and the western regions of Maricopa County; the lowest rates occurred on the northern, southern, and eastern regions of the county. The highest rates for asthma hospitalizations occurred in the western region of the county and along the northern stretches of I-17; the lowest rates occurred in the northeastern part of Maricopa County (E.S. Grineski, *Social Vulnerability, Environmental Inequality, and Childhood Asthma in Phoenix, Arizona, A Report to the Community*, 2006).

Although asthma results in lost days at school and work, as well as emergency room visits and hospitalizations, the symptoms are not always severe enough to require an emergency room visit or hospitalization. Asthma symptoms, however, can prevent children from living a fully active life. The severity of asthma can be categorized based on symptoms and diagnostic tests (mild intermittent, mild persistent, moderate persistent, or severe persistent).

Table 1 prepared by the U.S. Environmental Protection Agency shows monetized values of health endpoints (adverse-health effects). For example, per-incident values of hospital admission for asthma, asthma emergency room visit, and acute bronchitis have monetized values of \$6,634; \$299 and \$57, respectively. Other health endpoints have considerably higher values, such as chronic bronchitis (\$331,000), which is based on individual willingness-to-pay to avoid a case of pollution-related chronic bronchitis. Premature mortality due to long-term exposure of air pollution has a monetized value of \$6 million.

Table 1. Monetized Values of Health Endpoints

Health Endpoint (avoided health effect)	Value per Incidence (1999\$)	Derivation of Estimate
Premature Mortality	6,000,000	Mean of value-of-statistical-life estimates from 26 studies

Health Endpoint (avoided health effect)	Value per Incidence (1999\$)	Derivation of Estimate	
(long-term exposure) VSL		(5 CV and 21 LM studies) reviewed for section 812 Costs and Benefits of the CAA, 1990-2010 (EPA, 1999); also see www.InsideEPA.com (April 10, 2003)	
Chronic Bronchitis	331,000	Mean of a generated distribution of WTP to avoid a case of pollution-related chronic bronchitis (see note below)	
Chronic Bronchitis	107,000	COI estimate based on Cropper and Krupnick, 1990	
MRAD	48	Median WTP estimate to avoid one minor restricted activity day (Tolley et al., 1986)	
Decreased Worker Productivity	1	Each worker per 10 percent change in ozone	
Work Loss Day (WLD)	varies		
Hospital Admissions			
Cardiovascular (ICD codes 390-429)	18,387	COI estimates are based on ICD-9 code level information (mean hospital care costs, mean length of hospital stay, and weighted share of total cardiovascular illnesses) reported in Elixhauser, 1993	
Pneumonia (ICD codes 480-487)	14,693	COI estimates are based on ICD-9 code level information (mean hospital care costs, mean length of hospital stay, and weighted share of total pneumonia category illnesses) reported in Elixhauser, 1993	
COPD (ICD codes 490-494, 494-496)	12,378	COI estimates are based on ICD-9 code level information (mean hospital care costs, mean length of hospital stay, and weighted share of total COPD category illnesses) reported in Elixhauser, 1993	
Respiratory (ozone)	9,823	All ozone related respiratory	
Asthma	6,634	COI estimates are based on ICD-9 code level information (mean hospital care costs, mean length of hospital stay, and weighted share of total asthma category illnesses) reported in Elixhauser, 1993	
Asthma (emergency room visits)	299	COI estimate based on data reported by Smith et al., 1997	
Respiratory Ailments No	t Requiring H	ospitalization	
Acute Bronchitis	57	Mean of low and high values recommended for use in section 812 analysis (Neumann et al., 1994)	
Upper Respiratory Symptoms (URS)	24	Combinations of the 3 symptoms for which WTP estimates are available that closely match those listed by Pope et al. result in 7 different symptom "clusters," each describing a "type" of upper respiratory symptom (see note below)	
Acute Symptoms (19 ozone-related)	22		
Lower Respiratory Symptoms (LRS)	15	Combinations of the 4 symptoms for which WTP estimates are available that closely match those listed by Schwartz et al. (see note below)	

Source: EPA RIA, 2002, Regulatory Impact Analysis for the Proposed Reciprocating Internal Combustion Engines NESHAP, OAQPS, EPA-452/R-02-012 (November), pp. 8-23 and 8-24.

To the extent air pollution is reduced, public health improves. Air pollution can cause adverse health effects or exacerbate pre-existing health conditions that can impose hundreds of thousands of annual costs in terms of health care expenditures, pain and suffering, as well as reducing the quality of life and economic security of Arizona's population. Table 2 is included to show human health effects of criteria air pollutants. Implementation of this rulemaking, for instance, is expected to reduce 5,505 tons of carbon CO and 1,436 tons of NO_x in 2018. NO_x contributes to ozone formation. Quantifiable health effects of CO include congestive heart failure and decreased time to the onset of angina, as well as unquantifiable effects. NO_x leads to respiratory illness and decreased pulmonary functions, inflammation in the lungs, and immunological changes. Table 2 contains both quantified and unquantifiable health effects of criteria air pollutants. Excess mortality is shown to occur from ozone, PM, and lead pollutants.

Table 2. Human Health Effects of Criteria Air Pollutants

Pollutant	Quantifiable Effect	Unquantifiable Effect	Other Potential Effects
Ozone (O ₃)	Excess mortality, respiratory symptoms, MRA days, RRA days, hospital admissions, asthma attacks, changes in pulmonary function, chronic sinusitis and Hay Fever	Increased airway responsiveness to stimuli, centroacinar fibrosis, inflammation in the lungs	Immunologic changes, chronic respiratory diseases, extrapulmonary effects (e.g., changes in structure and function of other organs)
PM (TSP/ sulfates)	Excess mortality, bronchitis (chronic and acute), hospital admissions, LRI, URI, chest illness, respiratory symptoms, MRA days, ARA days, days of work loss, moderate or worse asthma status for asthmatics	Changes in pulmonary function	Chronic respiratory diseases other than chronic bronchitis, inflammation in the lungs
Carbon monoxide (CO)	Hospital admissions (congestive heart failure), decreased time to onset of angina	Behavior effects, other hospital admissions	Other cardio vascular effects, developmental effects
Nitrogen oxides (NO _x)	Respiratory illness	Increased airway responsiveness	Decreased pulmonary function, inflammation in the lungs, immunological changes
Sulfur dioxide (SO ₂)	Respiratory symptoms, combined responses of respiratory symptoms and pulmonary function changes, changes in pulmonary function in exercising asthmatics		Respiratory symptoms in non-asthmatics, hospital admissions

Pollutant	Quantifiable Effect	Unquantifiable Effect	Other Potential Effects
Lead (Pb)	Excess mortality, hypertension, non-fatal coronary heart disease, non-fatal strokes, IQ loss effects on lifetime earnings, IQ loss effects on special education needs	Health effects for individuals in age range other than those studies, neurobehavioral disease, reproductive effects, fetal effects from maternal exposure, delinquent and anti-social behavior in children	

Source: Extracted from EPA 1997, Table D-4, Appendix D-6. Excess mortality for ozone and PM was estimated using PM_{10} as an indicator of the pollutant mix to which individuals were exposed.

MRA=minor restricted activity; RRA=respiratory restricted activity; PM=particulate matter; TSP= total suspended particulate; LRI=lower respiratory illnesses; URI=upper respiratory illnesses; ARA=all restricted activity

Implementation of this rulemaking is expected to reduce ozone-forming pollution. Exposure to ozone negatively impacts children's lung function and lung growth (Gauderman WJ, Avol E, Gilliland F, Vora H, Thomas D, Berhane K, McConnell R, Kuenzil N, Lurmann F, Rappaport E, Margolis H, Bates D, Peters J. "The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age," The New England Journal of Medicine 351 (11), 2004, 1057-1067). Ozone also prematurely ages the lung (M. Lippmann, "Health Effects of Ozone: A Critical Review" JAPCA 39(5) 1987: 672-695; Kinney PL, Lippmann M. "Respiratory Effects of Seasonal Exposure to Ozone and Particles." Arch. Environ. Health 55(3) 2000: 210-216). According to studies by McConnell et al (McConnell R, Berhane K, Gilliland F, London SJ, Vora H, Avol E, Gauderman WJ, Margolis HG, Lurman F, Thomas DC, Perers JM. "Air Pollution and Bronchitic Symptoms in Southern California Children with Asthma." Environmental Health Perspectives 107(9) 1999: 757-760) and Sandford and Silverman (Sandford AJ, Silverman EK, "Chronic Obstructive Pulmonary Disease: Susceptibility factors for COPD the Genotype-environmental Interaction." Thorax 57 2002:736-741), illness from air pollution in children may produce chronic obstructive pulmonary disease later in their lives. Fine particle emissions from the combustion of diesel and gasoline in internal combustion engines are associated with cardiac arrhythmias, higher markers of inflammation and alternation in blood clotting, and development of atherosclerosis (Brook RD, Brook JR, Rajagopalan S. "Air Pollution: The 'Heart' of the Problem." Cur Hypertens Rep. 51(1) 2003: 32-39.).

A recent study established a direct link between increased levels of carbon dioxide in the atmosphere and increases in human mortality. Increased temperatures and water vapor from higher carbon dioxide separately increase ozone more in areas that are already polluted. Thus, the global warming phenomenon could exacerbate ozone the most in these highly polluted areas and result in 1,000 annual deaths and cancers by 20-30 cases for each 1 degree Celsius rise in carbon dioxide-induced temperature. Many more cases of respiratory illness and asthma in the U.S. also are predicted to occur as a result. The author of the study, Mark Z. Jacobson, said in the abstract that "[a]bout 40% of the additional deaths may be due to

ozone and the rest, to particles, which increase due to CO₂-enhanced stability, humidity, and biogenic particle mass. An extrapolation by population could render 21,600 (7,400-39,000) excess CO₂-caused annual pollution deaths worldwide, more than those from CO₂-enhanced storminess." (Jacobson, 2008)

Unquantified adverse impacts include decreased forest productivity; decreased yields for fruits and vegetables, including both commercial and noncommercial crops; damage to urban ornamental plants; damage to ecosystems and their myriad functions and damaged recreational sites and forest aesthetics (U.S. EPA, *Regulatory Impact Analysis for the Proposed Reciprocating Internal Combustion Engines NESHAP*, 2002). The overarching benefit, reducing the risk of catastrophic climate change, was discussed in the Background section.

2. Consumer Impacts

These rules will make it illegal to register, lease or rent for use in Arizona new 2012 or later model year vehicles that are not certified to California standards, unless they meet certain exemptions. The cost of these certified vehicles will increase to pay for the modifications to the vehicle emissions control systems, drive trains and other technologies that will be necessary to meet Clean Car Standards. The higher prices for new vehicles are expected to be passed on to consumers.

ADEQ, however, anticipates that net savings will accrue to consumers from reduced vehicle operating costs. Thus, ADEQ expects that the implementation of this rulemaking will provide cost-saving benefits to consumers in terms of reduced operating costs from reduced fuel costs at the pump and more high-efficiency, low-polluting vehicles from which consumers may choose. In 2003, for example, Arizona consumers used more than 2.6 billion gallons of gasoline, with Arizona sales in excess of \$3.4 billion. Of that expenditure, 79 percent left the state (Arizona Department of Commerce, *Energy Dollar Flow* Analysis, 2003). The Clean Car Standards will promote fuel diversification, including using electricity as a transportation fuel. For example, electricity used in plug-in hybrid vehicles would cost just 6-8 cents per mile compared to 13 cents per mile with gasoline, while reducing GHG emissions 51 percent per mile. (P. Lilienthal and H. Brown, *Potential Carbon Emissions Reductions from Plug-in Hybrid Electric Vehicles by 2030*, 2007, 72, 20.) More energy dollars will recirculate in the Arizona economy, creating a multiplier effect. With the increase in Arizona's population and considerably higher gasoline prices, consumption of renewable fuel and electricity for hybrids would be greater.

Even though the proposed standards are emission standards, and not designed to regulate fuel economy standards, the use of advanced technologies to meet both the GHG emission standards and other requirements, such as the fleet NMOG limits and the ZEV mandates, is expected to decrease fuel consumption and operating expenses over the life of these "California certified" vehicles. Although fuel economy is expected to increase, it will vary by the type of vehicle. CARB suggested that the reduction in fuel consumption should range from 1 to 21 percent for PC/LDT1 and from 2 to 25 percent for LDT2/T3 (CARB, Technical Support Document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles Economic Impacts of the Climate Change Regulations, August 6, 2004).

Reduced gasoline consumption leads to reduced GHG emissions and generates cost-savings for consumers and the general public. ADEQ anticipates that the increased costs of vehicle prices would be recouped over time by consumers due to reduced fuel and maintenance expenses. According to the Arizona PIRG analysis, once Arizona's program is fully implemented, consumers are projected to save at least \$3-\$7 per month due to reduced vehicle operating costs (D. Brown and E. Ridlington, *Cars and Global Warming: Policy Options to Reduce Arizona's Global Warming Pollution from Cars and Light Trucks*, October 2005, 18-20). However, based on current gasoline prices, actual savings are expected to be greater. The calculation was based on a gallon of gasoline costing \$1.74, compared to the current price of more than \$3.00 per gallon. Gasoline prices are expected to peak at about \$3.40 per gallon in the spring of 2008. The national average price was \$3.22 per gallon on March 10, 2008, which was \$0.69 more than one year ago (National Automobile Dealers Association [NADA], "Headlines, Gas Prices Near record, Following Oil," 2008). Table 3 summarizes the schedule of savings under different gasoline prices.

Table 3. Net Savings for Consumers at Various Gas Prices

	Gasoline Price		
	\$1.74 per gallon	\$2.20 per gallon	\$3.00 per gallon
Annual Net Savings While Repaying Loan	\$41-\$81	\$115-\$170	\$245-\$320
Annual Net Savings After Loan Repayment	\$282-\$314	\$360-\$410	\$490-\$560
Time to Recoup Higher Cost	3.7-4.3 years	2.9-3.4 years	2.2-2.5 years

Source: Ridlington and Brown (2006), 19.

Vehicle purchasers who pay for the vehicle in cash would experience greater savings (C. Witherspoon, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles," presentation to

STAPPLA/ALAPCO Fall Membership Meeting, October 23-27, 2004). The State of Rhode Island, for example, calculated the net savings to consumers that purchase a new vehicle to be \$170 annually at a gasoline price of \$2.20 per gallon during the term of a 60-month loan (State of Rhode Island Department of Environmental Management, Office of Air Resources, "Proposed Amendments to Air Pollution Control Regulation No. 37, entitled 'Rhode Island's Low Emission Vehicle Program," notice published October 31, 2005).

Considering the consumer pocketbook monthly cash flow, the CARB passenger cars and light duty trucks (PC/LDT1) and light duty trucks (LDT2) showed net monthly savings of about \$20. These are the likely vehicles that dealers will promote to be in compliance. If the net savings is aggregated over the life of the loan (5 years at 7 percent interest), annual net savings will range from \$500 to \$1,000; the longer the consumer owns the vehicle, the greater the savings will be.

Technological changes required to achieve the emission reductions will result in modest increases in vehicle prices, as shown in Table 4. CARB projected that passenger cars and light trucks would cost consumers from \$17 to \$367 more in the early years, and that large trucks and SUVs would cost from \$36 to \$277 more in the early years, and that consumers would more than make up that cost from increased fuel economy. Passenger cars and the light duty trucks will achieve 34 percent reduction in global warming pollution by 2016, with heavier light trucks achieving the required 25 percent reduction in the same period. (D. Brown and E. Ridlington, 2005, 18-20; CARB, Addendum Presenting and Describing Revisions to: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions form Motor Vehicles, September 10, 2004.)

Table 4. Manufacturers Costs: Average Fleetwide Incremental Costs 2009-2016

Year	Passenger Cars and Small Trucks and SUVs (PC/LDT1)	Large Trucks and SUVs (LDT2)
2009	\$17	\$36
2010	\$58	\$85
2011	\$230	\$176
2012	\$367	\$277

Year	Passenger Cars and Small Trucks	Large Trucks and SUVs (LDT2)
	and SUVs (PC/LDT1)	
2013	\$504	\$434
2014	\$609	\$581
2015	\$846	\$804
2016	\$1,064	\$1,029

Source: CARB, Final Statement of Reasons, (2005)11.

If vehicle operating costs are reduced for purchasers of new vehicles, and ultimately for owners of resale vehicles as well, consumers are expected to spend the net savings on additional goods and services, other than gasoline, according to their respective market basket of goods consumed each month. These expenditures would flow through the economy with the potential to create not only job growth but an increase in personal income. The State of Washington estimated personal income in the State to increase by \$28 million in 2010, \$911 million in 2020 and \$1.5 billion in 2030 (Washington Department of Ecology, "Cost, Benefit, and Least Burdensome Analysis for the Proposed Low Emission Vehicles, Chapter 173-423 WAC," October 2005).

With improved vehicle fuel efficiency, owners could increase VMT. This could be an incentive for owners to drive more as a direct result of lowering the marginal cost of driving a vehicle, referred to as the "rebound effect." As a result, it could reduce the intended goal of climate change regulations. Published estimates range from 0-50 percent depending on methodology and data sources. CARB estimated the long-term rebound effect to be 3.08 percent (CARB, *Initial Statement of Reasons*, 185).

3. Costs of Regulation (regulated entities)

ADEQ anticipates that this proposed rule will impact the following entities: automobile manufacturers, automobile dealers, fuel producers, gasoline stations, gasoline distributors and other businesses providing goods and services to consumers. ADEQ anticipates a net benefit.

Automobile Manufacturers

All motor vehicle manufacturers must comply with the vehicle certification standards, fleet average emission requirements, warranty, recall and other applicable requirements of Article 18 beginning with model year 2012. For example, each motor vehicle manufacturer's NMOG fleet average emissions from passenger cars, light-duty trucks and medium-duty vehicles delivered for sale in Arizona must not exceed the fleet average NMOG exhaust emission requirement. Each automobile manufacturer will have to demonstrate that all of its vehicles meet the standards imposed under this rulemaking.

If a report shows that the manufacturer has not complied with the NMOG fleet average emission standard, the manufacturer must submit a Fleet Average Remediation Report to ADEQ within 60 days. For model years 2012 through 2014, the manufacturer must submit this report, if needed, to ADEQ by March 1, 2015. If debits are accrued in all three years, the manufacturer must equalize one year of debits by the end of the 2015 model year and the remaining two years of debits by the end of the 2016 model year.

Each manufacturer also must comply with a ZEV sales requirement. The ZEV sales requirement would be based on total vehicle sales in Arizona, and would commence with model year 2012 passenger cars and light-duty trucks produced and delivered for sale in Arizona. The ZEV sales requirement allows manufacturers to choose between two compliance paths. The conventional path requires the manufacturer to place in service (i.e., to sell to an ultimate purchaser) in Arizona a certain number of ZEVs, which number is based upon the number of passenger vehicles and light-duty trucks that the manufacturer delivers for sale in the State. An alternative compliance path will allow manufacturers to meet the entire ZEV mandate with a combination of ZEVs, Partial ZEVs (PZEVs) and Advanced Technology PZEVs (ATPZEVs).

The rule provides flexibility to manufacturers while improving vehicles through advanced technology. It allows, for instance, manufacturers to average emissions across their entire vehicle mix, aggregate the GHG pollutants into equivalent emissions and bank and trade excess emission credits between vehicle classes and manufacturers. Manufacturers can earn and bank vehicle equivalent credits for any ZEV, ATPZEV or PZEV delivered for sale in Arizona on or after January 1, 1999. The credits may be used at a later time to comply with the ZEV sales requirement in R18-2-1808. Thus, a manufacturer could bank, acquire from another manufacturer and use credits in the same manner as the California program.

Examples of technology that manufacturers could use to meet the standards include discrete variable valve lift or camless valve actuation to optimize valve operation, instead of relying on fixed valve timing

and lift; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; improved air conditioning systems that operate optimally and leak less and/or use an alternative refrigerant (CARB, Fact Sheet, "Climate Change Emission Control Regulations," December 10, 2004).

Manufacturers can incorporate current technology to achieve compliance with the Clean Car Standards without having to downsize or reduce vehicle weights. They should be able to offer their current mix of vehicles. According to the Northeast States Center for Clean Air Future (NESCCAF), all of the technologies needed to achieve the GHG standards currently are in production (NESCCAF, *Reducing Greenhouse Gas Emissions from Light Duty Motor Vehicles*, September 2004). Examples include: electronic power steering, six-speed automatic transmissions, improved air conditioning systems, cylinder deactivation, and turbocharging.

Emission control regulations impose costs. California estimated the incremental cost of control to meet the GHG emission standards, beginning with the year 2009. Table 4 shows these average costs. When fully implemented, the average increase in the PC/LDT1 category would be \$1,064 and \$1,029 for the category LDT2. Because Arizona's program will be effective with the 2012 model year, ADEQ has no reason to believe that the initial incremental costs would be any higher or lower than the costs shown in Table 4.

Manufacturers could use marketing tools and technology-based cost decreases over time to recover the higher compliance costs. It is important to point out that in the past automobile manufacturers have had to comply with a variety of regulatory changes that increased production costs. Although costs have been passed on to consumers, the CARB analysis suggests that none of the increased costs have been passed on in the first year. It is suggested that during the second year, about two-thirds of the costs are passed on with the remainder of the costs passed on to consumers in later years. (CARB, *Initial Statement of Reasons*, 191). Furthermore, not all of the increased production costs are distributed evenly across all of their product lines. When consumers' elasticity of demand can be differentiated, higher costs can be passed on to the group that exhibits the least elasticity of demand, often referred to as price discrimination. For example, this latter group would be just as willing to purchase a vehicle at a price of \$29,065 as they would at \$28,000.

Whether manufacturers' revenues would increase revolves around the concepts of elasticity of demand and cost recovery techniques. A basic economic principle is that if the price of a good increases, the quantity demanded for that good will fall. If this holds true for vehicles, one would expect new car sales to fall. Other factors in the market could increase or decrease this effect. For example, if personal income increased, new car sales actually could increase over the pre-regulated market. Other factors also could cause a shift in demand that would negate the higher costs of new vehicles.

The price elasticity of demand measures how responsive buyers are to a change in price. The coefficient, which is always negative in value, is calculated by dividing the change in quantity demanded by the change in price. A coefficient (e) of -1.0 means the product is unitary elastic because a change in price will not lead to a change in quantity demanded. However, if a 5 percent increase in price leads to a 10 percent decline in sales, the good would be classified as relatively elastic (e = -2.0). Conversely, if that same 5 percent increase in the price of the good resulted in only a 1 percent decline in sales, that good would be classified as inelastic (e = -0.2) because consumers of that product are less sensitive to an increase in price. Studies show that -0.2 is the long-run elasticity of demand for vehicles. (CARB, *Initial Statement of Reasons*, 181)

A product will be more elastic if substitute products are readily available, if the product is relatively important in consumers' budgets, and if the time frame is relatively short because consumers are likely to be more sensitive to price over a longer period of time. A general rule is that most increased compliance costs can be passed on to consumers if demand for a product is relatively inelastic and supply is elastic. However, the rule is based on holding other factors constant that potentially could change this rule.

Basically, consumers have three choices: keep their current vehicle longer, purchase an older vehicle that does not have to comply with the Clean Car Standards, or pay the nominal amount extra for a new car. With the potential that consumers' incomes could increase and the desire for reduced operating costs of new vehicles, it is very likely that higher prices may not lead to a decline in quantity demanded. A logical conclusion could be that if automobile sales decline, it may not be a result of higher prices for LEV II vehicles. New car sales are a function of several factors other than price. These factors include: household income, demographics, unemployment, national economic growth, consumer confidence, consumer preferences and financing options.

Automobile Dealers

Automobile dealers, especially those selling new vehicles, will also be affected by this rulemaking. New auto dealerships play an important role in Arizona's economy, comprising 8.4 percent of total retail employment in the state and generating \$19 billion in sales, based on 2006 data. (NADA, *Driving Arizona's Economy*, 2007, available at www.nada.org) There were 4,147 Arizona licensed new and used automobile dealers trading 626,782 vehicles in fiscal year 2007. Vehicle sales and registrations comprise an important source of revenue for the state and local government, as well. Vehicle License Tax (VLT) revenue from new, never-before-titled vehicles was about \$120,755,000, or about 13.6 percent of the total VLT income. (ADOT statistics, personal communication.)

Dealers may increase their prices to reflect the cost increases manufacturers incur from complying with these regulations. Theoretically, higher prices will reduce demand for new vehicles, in turn reducing tax revenues for state and local governments. The price increases from compliance with these regulations, however, will be small relative to the overall purchase price of new vehicles. As discussed earlier, ADEQ expects consumer response to these price increases to be marginal.

Beginning in model year 2012, any low-mileage (7,500 miles or less on the odometer) vehicles sold by Arizona dealers for registration in Arizona must be "California certified." These vehicles are expected to cost about \$277 to \$367 more than federally-certified vehicles in the first year of implementation in Arizona. They may still retain noncompliant vehicles in their inventory for sale and registration out of state. Franchise dealers must order new certified vehicles from manufacturers. Dealers will face costs to adjust their inventory, conduct training, and alter business practices. However, the delayed effective date of this rule affords ample lead time to diminish these ultimate costs.

Fuel Producers, Gasoline Stations, and Gasoline Distributors

Because the Clean Car Standards will reduce fuel consumption, sales may decrease somewhat. This could have a negative impact on sales and employment in this sector. In Arizona, however, this impact may be mitigated completely due to expected population growth. Industries and employees impacted by this rulemaking would be those engaged in the refining and distribution of gasoline. ADEQ notes that distribution, sales and service industries will be the least impacted.

Other Businesses Providing Goods and Services to Consumers

Because the rule will result in the introduction of advanced technologies that reduce gasoline consumption, ADEQ expects that the savings over the life cycle of the vehicle will outweigh the higher prices for vehicles. This surplus of savings is expected to be expended on other goods and services as savings flow through the economy. Indirect impacts could be business expansions and new business creations. Therefore, even if some sectors of the economy experience losses (e.g., fuel producers, distributors, and gasoline retailers), other sectors could experience gains.

4. Small Business Impacts

State statutes require agencies to reduce the impact of a rule on small businesses by using certain methods, when they are legal and feasible, in meeting the statutory objectives of the rulemaking. Under \$41-1055(B)(5)(c)(i-iii), the methods that agencies may employ to reduce the impact on small businesses include the following: (1) establish less costly compliance requirements; (2) establish less costly schedules or less stringent deadlines for compliance and (3) exempt small businesses from any or all requirements.

Under A.R.S. § 41-1035, agencies must consider each of the methods set forth in that section and reduce the impact by using one or more, if the agency finds that the methods are legal and feasible in meeting the statutory objectives of the rulemaking. These methods include: (1) establish less stringent compliance or reporting requirements; (2) establish less stringent schedules or deadlines in the rule for compliance or reporting requirements; (3) consolidate or simplify compliance or reporting requirements; (4) establish performance standards to replace design or operational standards and (5) exempt small businesses from any or all rule requirements.

Some of the businesses impacted will be classified as small businesses. In this preliminary economic analysis, the type and number of these businesses have not been identified. Because the cost of higher priced vehicles will be more than offset by reduced operating costs, ADEQ does not expect that small businesses purchasing or leasing new vehicles will be negatively impacted. Other small business entities could benefit from increased revenues as consumers increase their expenditures due to reduced operating

costs of vehicles. These increases in expenditures can be explained by consumers' marginal propensity to consume over the years.

Section 177 the Clean Air Act requires that states adopting the California regulations maintain identical standards and consistent programs for a given weight class of vehicles. Therefore, ADEQ cannot reduce any regulatory impact on small businesses by changing any of the substantive requirements of the Clean Car Standards.

5. Consultants, Vendors, Repair Facilities

These are classified as affiliated businesses to the automobile industry. In the near future, employment, payroll, and revenues could be affected. Advanced emissions control systems will require new diagnostic and repair equipment and training, which will have a cost. However, these costs will occur in the future regardless of this regulation due to technological evolution in the automotive industry. ADEQ expects responses will be similar to those of the automotive service industry when catalytic converters and other emissions controls were first introduced. These innovations ultimately created new economic opportunities and fostered business creation.

6. ADEQ

ADEQ does not expect that the vehicle emissions inspection programs in Phoenix and Tucson will be negatively impacted. All vehicles of model years 1996 and newer are tested using on-board computer diagnostic test instead of a tailpipe test that measures emissions. Implementation of the Clean Car Standards will be fully consistent with the vehicle registration law that requires all vehicles of model year 1968 or newer to be equipped with emissions control devices that meet standards established by the Director [A.R.S. § 28-955(D)]. ADEQ will continue to exempt new vehicles for the first five years. When the "California certified" vehicles reach six years old, they will be tested using on-board diagnostics.

Each manufacturer shall submit a report to ADEQ by March 1 (procedures and format set forth in CCR, section 1961) that contains end-of-year data that calculates the fleet average NMOG exhaust emissions for the model year just ended. ADEQ staff will need to review these reports to verify compliance.

7. Arizona Department of Transportation, Arizona Motor Vehicle Division (MVD)

ADEQ does not expect significant impacts to MVD; however, in addition to developing and implementing appropriate forms, impacts could include increased time and monies for training, staffing, and programming. Based on experiences in other states that have adopted LEV II, this rulemaking could result in slightly longer wait times for MVD customers in its field offices and call centers. Due to complaints and investigations, the Office of the Inspector General Investigations could be impacted. MVD collected vehicle license taxes (VLT) for new vehicles of about \$120,755,000 for fiscal year 2007 (MVD March 11, 2008). Even if sales of new vehicles decline, ADEQ does not anticipate a decline in VLT, due to continued population growth and the need for new automobiles.

8. State Government (Revenue Impacts)

ADEQ does not expect this rulemaking to adversely impact state revenues. Sales tax revenues could increase or decrease, depending on how new and used vehicle sales change once the Clean Car Standards are implemented. The slightly higher vehicle prices should cause an increase in sales taxes collected. Any decline in the quantity demanded is not expected to result in a decline in sales taxes. Additionally, with the anticipated improvement in fuel economy, gasoline taxes are expected to decline. However, with the expectation that consumers will purchase additional goods and services, due to savings from reduced vehicle operating costs, sales tax revenues could increase. Finally, with the potential for increases in personal income, the Arizona Department of Revenue could collect more tax revenues.

9. Subdivisions of the State of Arizona

State and local governments, and other political subdivisions of the State, that own, lease or operate passenger vehicles and light trucks that are subject to this rulemaking will be required to use only "California certified" vehicles. The cost of these higher priced vehicles will be offset by reduced operating costs. Therefore, these proposed rules will not result in any significant adverse economic impacts to political subdivisions. Fleet owners should experience reduced operating costs.

10. Insurance Sector (indirect impacts)

Private and federal insurers paid about \$320 billion in claims on weather-related losses (1980 through 2005). In constant dollars, private insurers paid \$243.5 billion, the largest part of the claims, followed by federal crop insurance, \$43.6 billion, and federal flood insurance, \$34.1 billion. Although the amount of the claims generally increased during this time period, they varied significantly due to the incidence and effects of catastrophic weather events (e.g., hurricanes and droughts). The years with the largest insured losses generally were associated with major hurricanes, comprising more than one-third of all weather-related losses since 1980. Growth in population in hazard-prone areas and real estate developments have increased federal and private insurers' exposure, which helps to explain the increase in losses.

The heavily-populated areas along the Northeast, Southeast, and Texas coasts, for instance, have among the highest value of insured properties in the United States, which means these areas face the highest likelihood of major hurricane losses. Thus, because of these and other factors, federal insurers' exposures have grown substantially. Since 1980, the National Flood Insurance Program's (NFIPs) exposure has quadrupled, nearing \$1 trillion, and program expansion has increased the Federal Crop Insurance Corporation's (FCICs) exposure nearly 26-fold to \$44 billion. These escalating exposures to catastrophic weather events are leaving the federal government at increased financial risk. FCIC officials said that if the widespread Midwest floods of 1993 were to occur today, losses would be five times greater, or \$1.3 billion vs. \$6.5 billion. However, after adjusting for inflation, the cost would be \$8.5 billion in 2005 dollars, which is about one-half the costs of Hurricanes Katrina and Rita in 2005, and more than four times the premiums taken in by the program annually. Even without considering the impacts of climate change, federal flood insurance is of questionable financial sustainability without major and frequent subsidies (GAO 2007).

11. Employment Impacts

ADEQ expects the net employment impact to be positive. California concluded that employment actually would increase in the State because money previously spent by consumers on gasoline would circulate longer within the economy, which would increase employment. Even if employment in the automotive industry (i.e., manufacturing, suppliers and distribution facilities) did decline, the net effect would be an increase in overall employment and not a decline (CARB, "Technical Support Document for Staff Proposal Regarding Reductions of Greenhouse Gas Emissions from Motor Vehicles: Economic Impacts of the Climate Change Regulations," August 6, 2004).

Concerns over potential job losses if many vehicle models would not be offered for sale in Arizona was characterized by CARB as "unrealistic and based on selective data sources." The State of Washington and other states agreed ("Concise Explanatory Statement and Responsiveness Summary," Washington State Department of Ecology, November 28, 2005, 18-19). ADEQ concludes that these analyses are reasonable and that these rules will have positive employment effects.

The State of Washington used the Environmental Dynamic Revenue Analysis Model (E-DRAM) simulation scaled to Washington's economy to demonstrate the impact of low emission vehicle regulations. The State's net employment impact showed an increase by over 519 jobs in 2010; 9,506 jobs in 2020; and 14,345 jobs in 2030 ("Cost, Benefit, and Least Burdensome Analysis for the Proposed Low emission Vehicles, Chapter 173-423 WAC," October 2005).

F. Social Costs

The general public, governments, the insurance sector, and other businesses face economic losses from weather-related events due to climate change. Losses include both the insured and the uninsured. The 15-fold increase in insured losses from catastrophic events alone has far outstripped inflation, premium increases and population growth. Climate change is very likely to increase the weather-related events so that the risk will significantly increase. Escalating losses are a direct result of increased costs to society in the form of higher premiums, lowered coverage limits and increased restrictions in coverage. State and federal governments could expect additional financial liability in response to private insurers restricting coverage and withdrawing from markets ("New Report Warns of Rising Threat to Industry from Climate Change," *Insurance Journal*, 9/08/05).

Policy on climate change hinges on two factors: probability and consequence. Extensive scientific research has established a very high probability of very consequential damages resulting from climate change. A program that reduces GHG emissions can help reduce the probability of future climate change while creating alternatives to minimize the consequences to society. Reducing GHG emissions could help reduce expected future costs to society, but it also could reduce the chances of irreversible or potentially catastrophic damage (Peter R. Orszag, "Approaches to Reducing Carbon Dioxide Emissions," Congressional Budget Office Testimony, November 1, 2007).

Anthropogenic activities are accelerating the warming of the atmosphere by adding significant quantities of carbon dioxide and other GHGs. These activities have created and will continue to create negative externalities (adverse third party effects). This is the result of an inefficient market since prices, which could be distorted or absent, do not reflect true social costs and benefits from using the air to discharge these pollutants. In these cases, air is treated as a free good without internalizing potential damages caused by GHGs and other pollutants. Society bears the costs of adverse impacts to human health, property, and the environment.

Refer to subpart 2 "Consumer Impacts" under section E for social benefits of combined fuel savings and externality value.

G. Less Costly Alternatives

ADEQ could implement neither a less costly alternative to this rulemaking nor less costly compliance options. Federal standards are less stringent than California's standards. Requiring "California certified" vehicles is the most protective standard for human health and the environment. Since section 177 of the Clean Air Act requires that a state adopting the California regulations maintain identical standards and consistent programs for a given weight class of vehicles, the only regulatory alternative to adopting GHG standards would be to revert back to less stringent federal standards that fail to address GHG emissions. Thus, no alternatives or combination of compliance options could be implemented that would be equally effective in achieving the emission reductions projected.

H. Limitations of the Data [§41-1055(C)]

ADEQ relied on various studies on the technological and economic feasibility of these regulations, including other states that have adopted the Clean Car Standards. The State of Washington, for example, used California data as a basis for showing costs and benefits to its residents (through mathematical proportioning). ADEQ requested information about economic impacts when it proposed this rulemaking (14 A.A.R. 258, February 1, 2008), but received only meager information.

ADEQ determined that the costs and benefits to Arizona will be similar to impacts identified by other states adopting the Clean Car Standards. Furthermore, the economic impacts set forth by CARB correctly

identify and monetize the impacts of the Clean Car Standards, and that the conclusions are applicable to Arizona. These support documents substantiating the technical and economic feasibility and public policy merits of the Clean Car Standards have withstood numerous legal challenges, lending further credence to their veracity. Therefore, the net impact of these rules on Arizona's economy is anticipated to be positive but small in comparison to the overall economy. This rulemaking will not impose a significant adverse impact on Arizona's economy or businesses that operate here.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

- 1. The defined term "affected vehicle" was substituted for the defined term "new vehicle" in response to Comment 30 in order to avoid confusion with the different definition of "new vehicle" used in the Motor Vehicle Division's programs. In addition, the definition was modified to clarify that it only applies to passenger cars, light duty trucks and medium duty vehicles, since it is used exclusively in the the definition of "ultimate purchaser" (R18-2-1801(52)) and the applicability language for the certification standards (R18-2-1802). Those provisions apply exclusively to the itemized classes of vehicles.
- 2. The definition of "delivered for sale" was modified to conform to the California definition in order to avoid identicality issues in response to Comment 19.
- 3. The applicability provisions in R18-2-1802(A) and (D) were modified to use the defined term "affected vehicle." Since the defined term now itemizes the vehicle classes to which it applies, the itemizations of vehicle types formerly included in these subsections were removed.
- 4. In response to Comment 11, R18-2-1802(A); R18-2-1804(A) and (B); R18-2-1806(A); R18-2-1807(A), (B), (C), (K), (M) and (N) and R18-2-1809(A) and (C) were modified to change the start date for all requirements except the GHG standards in R18-2-1805 from model year 2011 to model year 2012 in order to assure compliance with the lead time requirements in section 177 of the Clean Air Act. In addition, in order to more closely conform to California's rules and simplify compliance, compliance will now be determined on the basis of complete model years, rather than calendar years, as proposed.

- 5. Subsection titles were eliminated from R18-2-1804(A), (B), (C) and (F) and R18-2-1805(B), (C), (D) and (F).
- 6. In response to Comment 27, the unnecessary requirement to report pre-model year data in R18-2-1804(C)(1) was eliminated.
- 7. The reporting date in R18-2-1804(E) was changed from model year 2013 to model year 2014 to conform to the new initial compliance date of model year 2012.
- 8. The deadlines for the initial three-year compliance period for the fleetwide NMOG emission limits were moved back two years in order to correct an error in the proposed rule and to conform to the new initial compliance date of model year 2012.
- 9. The dates to which the requirements in R18-2-1807(N) apply were moved back one year to conform to the new initial compliance date of model year 2012.
- 10. In response to Comment 29 and Comment 35, reporting requirements that are unnecessary and arguably in conflict with California requirements were eliminated from R18-2-1808(B), (C) and (E).
- 11. R18-2-1812 was deleted in response to Comment 20, which raised substantial Commerce Clause concerns about this provision.

11. A summary of the comments made regarding the rule and the agency response to them:

Support for Rule

Comment 1 ADEQ received numerous comments from concerned citizens in writing and at the public hearing thanking the Governor for her Executive Order directing adoption of this rule and urging ADEQ to finalize its adoption in order to improve air quality overall, reduce pollution, protect public health, save consumers money by reducing gasoline expenditures and contribute to the reduction of GHG emissions. The comments included; over 4,000 post cards signed by students from the University of Arizona, Arizona State University (ASU) and campuses across the state and delivered by the Arizona Public

Interest Research Group (PIRG); 202 signatures by ASU West Campus students on a papier mâché car; 370 signatures on banners prepared by ASU students; a letter signed by 79 public interest groups and businesses; a petition signed by 98 citizens and a letter from the Sierra Club—Grand Canyon Chapter ("Sierra Club").

Response ADEQ appreciates the overwhelming support for the rule demonstrated by these comments and agrees that the rule will accomplish the benefits identified.

Comment 2 Numerous commenters identified specific health problems that they or family members suffered and that are attributable to air pollution and urged adoption of the rule to address these types of problems.

Response ADEQ appreciates these comments and agrees that the rules will help to reduce ozone pollution, which exacerbates many of the health problems identified by the commenters.

Comment 3 ADEQ has the authority to adopt this rule under federal law and A.R.S. §§ 28-955, 49-447 and other provisions of Title 49, A.R.S. [Sierra Club]

Response ADEQ agrees with this comment.

Comment 4 The rule will not make vehicles unaffordable or limit the availability of certain types of vehicles, as claimed by the manufacturers. Consumers will more than recoup the cost increases attributable to the rule through fuel cost savings. [Sierra Club; Consumer Federation of America]

Response As indicated elsewhere in this Notice of Final Rulemaking, ADEQ agrees with this comment.

Comment 5 Arizona should adopt the Clean Car Rule and not let the federal government dictate the State's policy. [Numerous commenters]

Response ADEQ agrees that current federal standards for GHG emissions, including the recent amendments to the CAFÉ standards, are not adequate to address climate change.

Comment 6 There are many types of clean car technology already available to car makers, including: hydrogen, ethanol, compressed natural gas, vegetable oil, biodiesel, and hybrid technology. [Numerous commenters]

Response ADEQ agrees with this comment.

Comment 7 The Clean Car Rule is a tool that will be used in solving the problem of global warming. The Rule will make Arizona more sustainable place to live for future generations. [Numerous commenters]

Response ADEQ agrees that the rule will contribute to sustainability.

Comment 8 Arizona should adopt the most stringent measures possible for new and used cars. [Numerous commenters]

Response As noted elsewhere in this Notice of Final Rulemaking, California standards are in fact the most stringent standards for new vehicles that Arizona may adopt under federal law. Arizona's vehicle emissions testing program for in-use vehicles is the most advanced and effective in the nation.

Procedure

Comment 9 There have been no stakeholder meetings for this rule. The earlier meetings of the Climate Change Advisory Group (CCAG) are not a substitute for the traditional stakeholder vetting of proposed rules. [Arizona Chamber of Commerce and Industry (Arizona Chamber)]

Response The CCAG process provided greater opportunity for public involvement and attracted a far more diverse representation of stakeholder interests than ADEQ's typical stakeholder process. The CCAG held 40 technical work group and six full meetings while reaching its recommendations and writing its reports. All meetings of CCAG and CCAG's technical work groups were open to the public, and calls to the public were made at the end of each meeting. Any stakeholder was allowed to participate in any technical work group meeting. A representative of the automobile manufacturers attended two full CCAG meetings and the last five (out of eight total) Transportation and Land Use Work Group meetings.

Appointed by the Governor, the CCAG comprised a diverse group of stakeholders who brought broad perspective and expertise to the topic of climate change in Arizona. Members represented the following sectors: electric power generation, fossil fuel industry, manufacturing, mining, agriculture, forestry, construction and building, tourism and recreation, heath care, non-governmental organizations, Indian tribes, state and local government, and the general public.

In any case, Arizona administrative law does not require that a stakeholder process precede a rule proposal.

Comment 10 The proposed rule represents an important policy decision with far reaching ramifications for the state and its citizens. We believe that policy decisions of this nature are best developed through a

collaborative effort between the legislative and executive branches. That did not occur in this instance, as the legislature was completely bypassed. [Arizona Chamber; Automotive Service Association of Arizona (ASA)]

Response ADEQ already has the authority to adopt vehicle emission standards under A.R.S. §§ 49-447, 49-421(1) and 28-955(D). The legislature has delegated broad rulemaking authority to ADEQ under A.R.S. §§ 49-104(A)(10), (B)(4) and 49-425.

Legality of LEV II Provisions

Comment 11 The proposed adoption of the Low Emission Vehicle phase II (LEV II) and Zero Emission Vehicle (ZEV) regulations beginning in model year 2011 violates the Clean Air Act requirement that states choosing to adopt California standards "adopt such standards at least two years before commencement of such model year." The 2009 model year commenced January 2, 2008. The Arizona proposed regulations attempt to require automakers to meet the standards in the 2011 model year even though the 2011 model year commences on January 2, 2010, less than two years after these regulations will be adopted. [Alliance of Automobile Manufacturers Written Comments ("Alliance Written Comments")]

Response ADEQ agrees that for the reasons given in the comment, the California standards should apply beginning in the 2012 model year and has modified the final rule accordingly.

Comment 12 State standards adopted under section 177 of the Clean Air Act must be "identical to the California standards for which a waiver has been granted for such model year." The identicality requirement means that no state may modify the California regulations. Section 177 goes on to specify that no state may "prohibit or limit, directly or indirectly, the manufacture or sale of a new motor vehicle or motor vehicle engine that is certified in California as meeting California standards." *Id.* Furthermore, no state may "take any action of any kind to create, or have the effect of creating, a motor vehicle or motor vehicle engine different than a motor vehicle or engine certified in California under California standards (a 'third vehicle')." [Alliance Written Comments]

Response ADEQ does not agree that section 177 prohibits states from making any modifications to California requirements. This same commenter has noted that some states have declined to include the zero emission vehicle (ZEV) mandate in their rules and has advocated that Arizona do the same.

Comment 13 By adopting and attempting to enforce the California fleet NMOG average, Arizona may violate section 177. A manufacturer's fleet NMOG average in Arizona will depend on its particular sales

mix in Arizona, which is, of course, determined by Arizona consumers. By virtue of the differences between the Arizona and California markets, it is highly unlikely that a manufacturer will sell exactly the same products in exactly the same proportions in Arizona as it will in California. Data indicate that there is a 56 percent sale of trucks vs. 44 percent passenger cars in Arizona. However, the sales in California are 51 percent cars and 49 percent passenger cars. (This is how the comment describes the breakdown. Presumably the commenter intended to state that one of these percentages applies to trucks.) If Arizona consumers demand a particular manufacturer's sales mix in Arizona that results in a higher fleet NMOG average, the manufacturer may be required to artificially limit sales of certain California certified vehicles that Arizona consumers prefer in order to comply with Arizona's fleet average requirement. Such a limitation on the sale of California certified vehicles would, at a minimum, be an indirect limit on the sale of a motor vehicle that is certified to California standards and thus would violate section 177.

This potential violation could be corrected if the Department simply required *reporting* rather than *compliance with*, the fleet average NMOG. [Alliance Written Comments]

Response The sales mix in every state will necessarily be somewhat different than California's and therefore may have the effect described in this comment. Congress nevertheless specifically authorized the states to adopt California's standards in section 177. The mere possibility that a manufacturer might need to restrict the sale of some vehicles in order to meet fleet average requirements therefore cannot be a limitation on the sale of California certified vehicles within the meaning of that section. This conclusion is supported by the decision of the Second Circuit in *Motor Vehicle Mfrs. Assn. v. New York State Dept.* of Environmental Conservation, 17 F.3d 521 (2d Cir. 1994), in which the court held that a "marketing choice" adopted by manufacturers to comply with a state's adoption of the California vehicle emission standards did not constitute "a requirement imposed by" the state agency.

Comment 14 Arizona's proposed ZEV standards are not identical to the California standards in several different respects. Due to the lack of identicality, the proposed regulations violate section 177 and are preempted by section 209 of the Clean Air Act. It is therefore recommended that Arizona decline to adopt the California ZEV standards altogether. [Alliance Written Comments]

Response The commenter identifies only three differences between Arizona's ZEV requirement and California's. [See Comment 15 through Comment 17.] As noted below, the final rule eliminates one of these, and the other two do not raise identicality issues, as explained below. The final rule therefore includes the ZEV standards.

Comment 15 The "Section 177 Provision" in 13 California Code of Regulations (CCR) § 1962(d)(5)(D) effectively counts any model year 2011 or earlier "Type III" ZEV (fuel cell vehicle) in any state that adopts the California standards as if the vehicle were in service in all such states. CARB is considering amending the ZEV rules to extend the sunset date for this provision beyond 2011 and to apply the provision to other types of ZEVs. To avoid inconsistency with this possible change, ADEQ should eliminate proposed R18-2-1806(C), which would end the Section 177 provision only when certain conditions are satisfied. [Alliance Written Comments]

Response This comment appears to be based on the mistaken assumption that if R18-2-1806(C) were not adopted, CARB's anticipated amendments to § 1962(d)(5)(D) would automatically go into effect. In Arizona, rules from other jurisdictions may only be adopted as of a date certain. This is expressly recognized in R18-2-1803, which incorporates the relevant California standards "as of January 1, 2008, and no future editions or amendment." If CARB does amend § 1962(d)(5)(D) to provide additional flexibility to manufacturers, ADEQ will of course amend Arizona's rules to conform, in order to avoid identicality issues. In the interim, R18-2-1806(C), which is modeled on an Oregon rule, is designed to provide additional flexibility to the Arizona program and to alleviate concerns about fuel cell infrastructure raised by the manufacturers.

Comment 16 To maintain consistency with the California reporting requirements, it is recommended that ADEQ revise R18-2-1807 (ZEV Credit Bank and Reporting) so manufacturers establish a ZEV Credit Bank with Arizona and follow reporting procedures of ZEV credits and debits in accordance with CARB Manufacturers Advisory Correspondence (MAC) #06-03 Zero Emission Vehicle (ZEV) Credit Reporting and Tracking System, dated October 19, 2006 (Attachment II). [Alliance Written Comments]

Response The comment fails to identify any specific discrepancies between the proposed rule and California reporting requirements. The proposed reporting ZEV reporting requirements are modeled on other state incorporations of the LEV II standards and have not been modified in the final rule, except to the extent necessary to reflect the model year 2012 start date.

Comment 17 The Department's elimination of the 15 year/150,000 mile warranty requirement provision for partial zero emission vehicles or PZEVs creates identicality issues with the California regulations and violates the Clean Air Act. In order to successfully eliminate the 15 year/150,000 warranty provision within the confines of the Clean Air Act, Arizona should completely eliminate the ZEV Mandate from its proposed rule. [Alliance Written Comments]

Response ADEQ disagrees. If ADEQ may eliminate the entire ZEV mandate without violating section 177 of the Clean Air Act, as this comment concedes, the Department may take the lesser step of eliminating one component of the requirement, as long as doing so does not require the manufacturers to produce a "third vehicle." Eliminating the warranty *requirement* in R18-2-1809(B) gives manufacturers the *option* of supplying PZEVS to Arizona customers with a more limited warranty than that required by California.

Comment 18 The final rule should exclude the 15 year/150,000 mile warranty. After the original equipment warranty expires, 70 to 80 percent of motorists prefer to go to an independent repair facility for repairs. A Rand Corporation study found that the 15/150,000 mile warranties being imposed under the California PZEV program will cause revenue declines for the independent aftermarket of between \$375 million and \$1.3 billion in 2020. Other studies also found significant impact on this industry from the warranty requirement. [California/Nevada/Arizona Automotive Wholesalers' Association (Auto Wholesalers; Randy's Automotive)]

Response The final rule retains the exclusion of the 15 year/150,000 mile warranty requirement in R18-2-1809(B).

Comment 19 Arizona has proposed that the definition of delivered for sale in Arizona include vehicles "that have received a bill of lading for sale in another state and have been sold to a purchaser who subsequently registers the vehicle in Arizona while the vehicle has 7,500 miles or less on its odometer." Vehicles delivered for sale in Arizona form the basis of several compliance requirements, including fleet average requirements. Vehicles delivered for sale out-of-state that are sold to a purchaser who subsequently registers the vehicle in Arizona cannot be included in the definition of delivered for sale in Arizona for several reasons. First, manufacturers are not required to include such vehicles in compliance requirements for California (or for that matter, for any state that has adopted California standards) and thus Arizona's proposal violates the identicality requirement of section 177 of the Clean Air Act. Second, manufacturers do not have control over which vehicles are registered in Arizona. Registration is controlled by the Arizona Department of Motor Vehicles, not automobile manufacturers. Manufacturers cannot be held to a compliance requirement over which they cannot control. Third, manufacturers could never submit compliance reports by the dates specified in the regulations. For example, Arizona, like California, requires that the fleet NMOG report be submitted by March 1 following the model year that just ended. A substantial number of vehicles produced in a given model year are not registered by March 1 following the end of the model year. Some vehicles may not be registered until several years after the end of the model year. [Alliance Written Comments]

Response ADEQ agrees that the change to the California definition of delivery for sale raises substantial identicality issues under section 177 of the Clean Air Act and therefore has deleted this provision from R18-2-1801(12) in the final rule.

Comment 20 ADEQ should delete R18-2-1812, which provides that only licensed new car dealers may sell vehicles with 7,500 mile or less on the odometer. Current Arizona law allows a vehicle that has been transferred by the person who first acquired it from the manufacturer to sell the vehicle as a "used motor vehicle." The result is that consumers have alternatives to new motor vehicle dealers. The proposed rule would remove these alternatives by requiring any 2012 model-year or later vehicle with less than 7,500 miles to be sold by a licensed new motor vehicle dealer. This provision also grants preferential treatment for in-state new motor vehicle dealers by securing the exclusive right to sell all low-mileage vehicles and therefore violates the Commerce Clause. The proposed change to the definition of "delivered for sale" would be a less onerous method of assuring that vehicles sold out of state but subsequently registered in Arizona are counted towards the rule's fleet average standards. [Centennial Leasing & Sales of Arizona, LLC (Centennial); Arizona Independent Automobile Dealers Association (AIADA); AAA]

Response ADEQ agrees that this provision raises substantial Commerce Clause concerns and has deleted R18-2-1812 from the final rule.

Comment 21 ADEQ should retain R18-2-1812. It will not have a substantial affect on interstate commerce and therefore does not rise to the level of a Commerce Clause violation. [Arizona Automobile Dealers Association]

Response This comment was submitted after the close of the public comment period. ADEQ is responding as a matter of courtesy but does not waive any objections it may have in a subsequent proceeding as a result of the late submittal.

As Comment 20 notes, proposed R18-2-1812 would grant preferential treatment to Arizona businesses. Indeed it would flatly prohibit any entity other than an Arizona new car dealer from selling low-mileage vehicles (7,500 miles or less on the odometer) that are to be registered in Arizona. As such, it is not subject to the substantial burden test referenced by this comment but to the nearly *per se* prohibition against state laws that discriminate against interstate commerce.

Legality of Greenhouse Gas Limits

Comment 22 The proposed adoption of the greenhouse gas (GHG) regulations violates the Dormant Commerce Clause because it imposes excessive burdens on interstate commerce in relation to the benefits achieved. [Alliance Written Comments]

Response The comment fails to identify any burdens on interstate commerce, let alone burdens that are excessive in relation to the considerable benefits identified in the Notice of Proposed Rule Making and the Economic Impact Statement (EIS) for this rulemaking.

Comment 23 EPA's denial of California's request to implement its own fuel economy regulations as part of the existing LEV II program prohibits California and all other states from implementing California's GHG regulations. [Alliance Written Comments; Arizona Chamber; Matthew Erwin on Behalf of Mazda North American operations ("Mazda");]

Response ADEQ agrees that this is the legal effect of EPA's waiver denial. For this reason, ADEQ has made adoption of the GHG emission standards (R18-2-1805) conditional on a reversal of EPA's decision. Conditional adoption now will minimize the delay between any such reversal and the effectiveness of the GHG standards in Arizona. If ADEQ waited until the reversal actually occurred before proposing to adopt the GHG standards, a new model year might begin between the date of the proposal and the rule's adoption, necessitating a delay of an additional model year in the rule's effectiveness.

Comment 24 California's attempt to regulate fuel economy via its proposed GHG regulations is in conflict with federal law which reserves to the national government the sole power to regulate motor vehicle fuel economy, as well as other provisions of federal law. [Alliance Written Comments; Chris Bostwick on behalf of Chrysler LLC at Oral Proceeding (Chrysler)]

Response The courts have uniformly rejected this argument.

The automobile manufacturers have sued in federal courts in Vermont and California to overturn state GHG limits for new cars. Both courts rejected the argument that federal fuel efficiency standards preempt the states from adopting those limits. *Green Mountain Chrysler Plymouth, et al. v. Crombie*, 508 F.Supp. 2d 295, 350 (D. Vt. 2007) (240 page memorandum and order); *Central Valley Chrysler Jeep v. Goldstone*, No. CV F 04-6663 AWI LJO, slip op. at 40 (E.D. Cal. Dec. 11, 2007) (57 page opinion).

In addition, in *Massachusetts v. EPA*, the Supreme Court expressly rejected EPA's argument that the Department of Transportation's regulation of fuel efficiency precluded the agency from regulating vehicle GHG emissions:

But that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's "health" and "welfare," a statutory obligation wholly independent of DOT's mandate to promote energy efficiency. The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.

127 S. Ct. at 1462, 167 L. Ed. 2d at 276 (citations omitted).

Suggested Technical Changes to Rule Language

Comment 25 There is no need to establish a start date separate from the model year start date. [Alliance Written Comments]

Response ADEQ agrees and has eliminated this provision from the final rule.

Comment 26 There is no NMOG Fleet Average requirement for medium-duty vehicles. [Alliance Written Comments]

Response ADEQ agrees and has eliminated this provision from the final rule.

Comment 27 The pre-model year projection requirement in R18-2-1804(C)(1) is unnecessary as manufacturers are required to demonstrate meeting the fleet average requirements at the end of the model year in accordance with 13 CCR §1961. [Alliance Written Comments]

Response ADEQ agrees and has eliminated this provision from the final rule.

Comment 28 Arizona will be adopting California's program mid-stream. Manufacturers have accumulated NMOG credits in California during 2009-2011 model years to use in the 2012-2014 model years. Moving the compliance dates in R18-2-1804(F) by two years would allow manufacturers to earn credits and transition into the NMOG fleet average requirements on a similar path as in California. [Alliance Written Comments]

Response The change suggested is necessary to accomplish ADEQ's intent, which was to provide the manufacturers with three years at the start of the program to come into compliance with the NMOG requirements in Arizona in the same manner as the Oregon LEV II rules. ADEQ therefore has made the suggested revisions to the final rule language.

Comment 29 Reporting VINS as required by proposed R18-2-1808(B) is unnecessary and not required in any other state including California. Second, Arizona cannot mandate manufacturers report operations in other states. [Alliance Written Comments]

Response ADEQ agrees and has eliminated this provision from the final rule.

Comment 30 The definition of new vehicle in R18-2-1801(36) would conflict with the definition in the statute for the Arizona Motor Vehicle Division (MVD) or would create confusion because it differs from that statute's definition. [AIADA; Centennial]

Response The definition would not actually conflict with the MVD definition, since they appear in different regulatory programs. ADEQ's definition would apply only to ADEQ's rules and would not affect any of MVD's programs. However, to avoid confusion between the two programs among entities subject to both, ADEQ is substituting the term "affected vehicle" for "new vehicle." The definitions are identical and are used in the same manner in the rules, thus preserving identicality with the California rules.

Comment 31 The definition of new vehicle is not necessary. The term is only used in R18-2-1812 and in the title to one of the California regulations incorporate by reference. The California regulations incorporated by reference do not contain a definition of new vehicle, let alone define the term in such a manner as to include all motor vehicles with an odometer reading of 7,500 miles or less. [Centennial]

Response The term was also used in the applicability section, R18-2-1802. As noted above, the term "affected vehicle" has been substituted for "new vehicle."

The California definition of new vehicle as a vehicle with less than 7,500 or fewer miles on the odometer is contained in statute. Section 39042 of the California Health and Safety Code defines a "new motor vehicle" as "a motor vehicle, the equitable or legal title to which has never been transferred to an ultimate purchaser." Section 43156(a) in turn provides that for purposes of the California new vehicle standards:

It is conclusively presumed ... that the equitable or legal title to any motor vehicle with an odometer reading of less than 7,500 miles, has not been transferred to an ultimate purchaser.

In order to be consistent with the California rule, Arizona's program must apply to vehicles with 7,500 miles or less on the odometer.

In addition, this provision protects Arizona new car dealers and independent dealers and brokers who sell low mileage vehicles as used cars from unfair competition and avoids circumvention of the rule by preventing the Arizona registration of used low-mileage vehicles that fail to comply with the California standards.

Comment 32 The exemption in R18-2-1802(E)(11) appears to duplicate that in (E)(2) (now (D)(2)), except it is less specific. [AIADA]

Response ADEQ agrees and has deleted this redundant exemption.

Comment 33 The definition of vehicle identification number should not include the 17-digit restriction. [AIADA]

Response ADEQ agrees and has deleted this language from R18-2-1801(53) in the final rule.

Comment 34 It is not clear why the definition of "sale" or "sell" in R18-2-1801(47) is limited to sales to ultimate purchasers. [AIADA]

Response If this limitation were not included, the rules would prohibit sales of non-California cars between dealers. Since some of the rule's exemptions allow dealers to have non-California certified vehicles on their lots, e.g. R18-2-1802(D)(2), this would be inappropriate.

Comment 35 The requirement in R18-2-1808(E) that every licensed car dealer, new or used, provide a report of each sale of a previously-titled vehicle subject to the rule to ADEQ would create an unnecessary burden for the Department and dealers. [AIADA]

Response ADEQ agrees and has deleted this provision from the rule.

Environmental Benefits

Comment 36 The Energy Independence and Security Act of 2007 (EISA) requires an unprecedented 40 percent increase in Corporate Average Fuel Economy (CAFE) standards by 2020, resulting in a 30 percent reduction in CO2 emissions nationally. With the adoption of EISA and the resulting reductions in GHG emissions, Arizona's goal of addressing climate change has already been addressed at the federal level and alleviates the need for the state to move forward with the California program. [Alliance Written Comments; Laura Dewey on behalf of Alliance of Automobile Manufacturers at Oral Proceeding (Alliance at Oral Proceeding); Mazda; Chrysler; Arizona Chamber]

Response As noted in the EIS, the California GHG emission standards would achieve substantially greater reductions in GHG emissions than the CAFÉ standards. (CARB, *Comparison of GHG Reductions for the US and Canada under US CAFE Standards and CARB GHG Regulations*, February 25, 2008, vii)

Comment 37 Comparison between the federal Tier 2 emissions program and CA LEV's LEV II regulations shows that adoption of CA LEV's emission standards will have a minimal impact on air quality improvements as compared to the federal program. When comparing the on-road emission inventory of CA LEV with the federal Tier 2 program, it shows a 3 percent difference in VOC + NOx in Arizona. This is minimal and within the error of the model. Therefore, the conclusion drawn from these studies is that there will be no measureable environmental benefit witnessed in Arizona with the adoption of CA LEV as compared to the federal program. [Alliance Written Comments; Alliance at Oral Proceeding]

Response As noted in the EIS, the impact on emissions of criteria pollutant from adoption of the LEV II standards will be substantially greater than represented in this comment. Under revisions to the ozone NAAQS announced by EPA on March 12, 2008, four counties in Arizona (Maricopa, Pima, Pinal and Gila) may be ozone nonattainment areas in the future. The reductions in ozone precursor emissions achieved by the LEV II standards may therefore prove critical in reaching the new ozone standard of 0.075 parts per million (ppm), which is more protective of human health than the previous standard of 0.084 ppm.

Costs of Compliance And Effect On Vehicle Market

Comment 38 The Department appears to have done no analysis of the major cost of compliance with the California rule. [Alliance Written Comments]

Response ADEQ disagrees. A preliminary EIS that complies with Arizona statutory requirements was included in the Notice of Proposed Rulemaking, and a final, compliant EIS is included in this notice.

Comment 39 Proponents of the greenhouse gas rule sometimes claim that increases in initial purchase prices for new automobiles subject to the regulation might be offset by the reduced operating cost, such as fuel savings, and thus could result in a net savings to the purchaser. Such an assumption is not consistent with mainstream economic analysis of how consumers value energy cost savings, which recognizes that most consumers apply steep discount rates to the value of future energy cost reductions. [Alliance Written Comments]

Response CARB has demonstrated that the discount rate chosen to estimate fuel savings was reasonable and that the rate advocated by the automobile manufacturing industry was unsupported. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 246-247). In addition, CARB used a very conservative gasoline price of \$1.74 to estimate fuel savings. (*Ibid.* 245). Since gasoline prices have risen dramatically in recent years, using a more current gasoline price would result in much higher estimated fuel savings.

Comment 40 The proponents of the greenhouse gas rule also ignore opportunity costs, which are important in any mainstream economic analysis of measures like the California rule. The total costs of such a rule include, for example, the value of the foregone opportunity to purchase a vehicle that may be less fuel-efficient but has other features that a consumer desires more than enhanced fuel efficiency. Such features obviously include vehicle performance, safety, capacity, comfort and aesthetics. The Department cannot properly ignore such costs that will be borne by Arizona residents. Consumers who buy a vehicle, but who are forced to purchase technology or other features added or subtracted from the vehicle to meet standards that they would not otherwise prefer, incur costs that are real and quantifiable. [Alliance Written Comments]

Response CARB took into account the potential for opportunity costs such as those described in the comment to be incurred in developing the GHG standards and reasonably determined that they were unlikely to be incurred:

While it is possible that automakers might choose to achieve compliance by making drastic pricing adjustments or reducing existing levels of vehicle performance or drivability, such approaches are highly unlikely. It is more likely, in staff's view, that competitive imperatives will motivate auto manufacturers to achieve compliance by integrating improved technologies, while maintaining or improving upon vehicle performance.

(CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 255).

The EIS also makes clear that the opportunity costs from *not* adopting the California rule include adverse human health effects and increased health care costs caused by higher emissions of pollutants from vehicles.

Comment 41 The ZEV Mandate requires that automakers power a specified percentage of their new vehicle fleet with only battery electricity or hydrogen fuel cell power. The latest estimate by CARB is that the ZEV mandate will cost between \$768 million to \$2 billion annually, just for the six largest automobile manufacturers every single year just in California. [Alliance at Oral Proceeding]

Response As CARB has noted, although the short-term cost of the pure ZEV mandate is relatively high compared to other elements of the LEV II rules:

They must...be viewed in the context of the objective that the Board is trying to achieve. The purpose of the pure ZEV obligation within the ZEV program is to maintain significant pressure on manufacturers to continue ZEV technology development. We know of no other mechanism that can accomplish this objective in a more economical fashion.

(CARB, "The 2003 Amendments to the California Zero Emission Vehicle Program Regulations: Final Statement of Reasons," January 2004, 41-42). In addition, under R18-2-1806(C), manufacturers will not be required to market Type III ZEVs in Arizona until three years after the Director finds an adequate hydrogen fuel infrastructure is in place in this state.

Comment 42 Adopting California's costly vehicle emission program will limit vehicle availability. [Alliance Written Comments; Chrysler; Mazda; Paul Beebe of Brad's Collision Center]

Response CARB reasonably rejected the claim by manufacturers that they would be forced to engage in "mix shifting"—the discontinuation or reduction of sales in certain products in California—in order to meet the GHG standards:

In order for a strategy such as mix shifting to be effective, a manufacturer would probably need to discontinue its largest vehicles and try to focus sales on smaller ones with lower CO2 emissions. However, their largest vehicles are also their most profitable ones, so that ceding market share in those segments to competitors would be unlikely. Since staff cost estimates for complying with the proposed requirements are much less than the profit manufacturers make on these vehicles, it seems more likely that manufacturers would not abandon the larger segments of the market. GM, for example, has said they will implement a full hybrid powertrain option on their larger SUVs in the 2008 timeframe, which is a more costly approach than staff is suggesting is needed in order to meet the

proposed requirements. Consistent with the directive in AB 1493 that the regulation not affect vehicle model availability and consumer choice, staff continues to maintain that all vehicle segments can comply with the requirements cost effectively. Thus, mix shifting would not be a likely compliance path for any manufacturer.

(CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 178).

Comment 43 Arizona has different circumstances than California that include different consumer preferences for vehicles, different driving conditions and different needs for employer and employees in different parts of our state. ADEQ does not appear to have taken those differences into account. [Arizona Chamber]

Response CARB's reasoning in rejecting manufacturer's predictions of mix shifting (see response to Comment 42) are equally applicable to Arizona, regardless of the preferences of Arizona consumers. In addition, Arizona is probably more similar to California in terms of terrain, land-use patterns and other parameters that could affect the mix of vehicles to which the standards will apply than any of the other states that have adopted the LEV II program. (See also response to Comment 48.)

Comment 44 California's latest Initial Statement of Reasons to support the 2008 Proposed Amendments to the ZEV Program projects an incremental cost for a fuel cell vehicle at \$250,000 to \$300,000 in the 2012-2014 time period and \$35,000 to \$120,000 for a battery electric vehicle. These are vehicles we are required to place in service, regardless of whether or not a market exists, or if the infrastructure is even there. Plug-in Hybrids, another new, but unproven, technology required under the proposed changes to the ZEV program, are projected to have an incremental cost of \$25,000 in the 2012-2014 time period.

Response Since these changes have not yet been adopted, this comment is premature.

Comment 45 LEV II does not provide the compliance flexibility necessary to allow the use of flexible fueled vehicles or clean diesel technology. *[Chrysler]*

Response As CARB has noted, the manufacturer's claim that clean diesel vehicles could not comply with LEV II requirements was effectively contradicted by comments from the Manufacturers of Emission Controls Association. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 124).

Comment 46 Currently, Mazda does not manufacture vehicles that will meet the California GHG standards. When fully implemented in 2016, the standards equate to an average of over 43 miles per gallon for passenger cars. Mazda's most fuel efficient vehicle achieves 36 miles per gallon. [Mazda]

Response The Pavley legislation charged CARB with developing the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. 2002 Cal. Stat. ch. 200. CARB gave detailed consideration to extensive comments from the automobile manufacturing industry and reasonably determined that the standards imposed were both feasible and cost-effective. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 255).

Comment 47 The GHG standards go too far too fast and will not be feasible to meet by 2016. Complying with this regulation will force Mazda to develop vehicles that will be too expensive and not provide the performance that our customers demand. [Mazda]

Response See response to Comment 46.

Comment 48 The rules would limit the sale of light and medium trucks consumers depend on for business uses, such as farming and other commerce. [ASA]

Response Even if the GHG standards go into effect, pickup trucks will remain available. There will be a moderate (approximately four percent) increase in cost, but this increase will be more than offset by fuel savings. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 104-05). The increase in cost for medium sized trucks and SUVs in the first year of the standards was projected by CARB to be \$36. See Table 4, Economic Impact Statement.

Comment 49 The Arizona Department of Environmental Quality has not undertaken the duty to perform an economic impact study to evaluate the effects these regulations will have on independent automotive repair facilities across the state of Arizona regardless of location. [ASA]

Response A discussion of this impact has been added to the final EIS.

Comment 50 The California GHG rule would needlessly inject the government into consumers' choices about the types of vehicles that best suit their needs. Some supporters of the California rule claim that the rule is beneficial because it will mandate higher fuel economy. That claim assumes, contrary to common sense and experience, that a regulatory agency in California can better define the private

economic interests of Arizona consumers than the consumers themselves. Consumers in Arizona or any other state who want to buy high-mileage vehicles can do so today without the need for specific regulations that require them to do so or prohibit them from buying a vehicle with lower mileage but more needed capability. [Alliance Written Comments]

Response The claim that the market can be relied on to establish fuel economy levels that benefit consumers could be applied in opposition to the federal CAFÉ standards, as well as the California GHG standards. This same commenter, however, supports the recent increase in the CAFÉ standards. The commenter provides no support for its claim that Arizona consumers will have access to cars meeting California's GHG standards.

Further, the Department has not proposed the rules to achieve higher fuel economy. The GHG standards are being proposed because, if they are allowed to take effect by the federal government, they will reduce GHG emissions from vehicle by about 32 million metric tons from 2012 to 2020 and thereby contribute to the state's efforts to combat global climate change. The LEV II standards will limit emissions that cause ozone, an air pollutant that aggravates asthma, reduces lung function and inflames and damages the linings of the lungs, and assist Arizona as it seeks to reach attainment with the new 2008 more protective ozone standard. Improved fuel economy is an important side benefit that offsets the increased vehicle prices that are projected to result from the rule, but it is not the goal of the rule.

Feasibility of Compliance Options

Comment 51 The assumption that the inter-manufacturer credit provisions and alternative compliance features of the California rule will play a significant role in compliance with the regulation is questionable. The alternative compliance features of the California greenhouse gas rule are so stringent that they appear designed to discourage efforts to comply using any means other than the types of fuel economy technologies envisioned in CARB's main regulatory analysis, and they probably could not be used by any major full-line manufacturer. If the Department believes that alternative compliance plans will be part of the compliance strategy for manufacturers in Arizona, it should provide examples of the types of plans that are both economically practicable and approvable under the regulation. [Alliance Written Comments]

Response The alternative compliance mechanisms developed by CARB are consistent with the mandate of the Pavley legislation that any alternatives achieve reductions in GHG emissions equivalent to the underlying requirements. The alternatives advocated by the automobile manufacturers during the California rulemaking process were inconsistent with this mandate. CARB reasonably concluded that the

manufacturers could employ the compliance options incorporated into the rule. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 221-22, 349). Indeed, manufacturers have used inter-company credit transfers to comply with the existing LEV II requirements. As a matter of policy, ADEQ has concluded the Arizona program should be consistent with the Pavley mandate. In any case, modifying California's alternative compliance options in the rule would raise identicality issues.

Comment 52 The notion that companies that can accumulate GHG emission credits will sell those credits to other companies is illogical. Such companies will use any such credits to reduce their own future compliance costs. If the Department believes that the industry will be able to reduce its compliance burdens significantly with inter-company trading, it should explain why. [Alliance Written Comments]

Response CARB reasonably concluded that inter-company trading was a viable alternative compliance option. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 222-23). In any case, eliminating this alternative compliance option would in all likelihood violate section 177 of the Clean Air Act. See also response to Comment 51

Comment 53 The total retail price increase to cover the cost for a grid-connected hybrid vehicle (GHEV) would be approximately \$12,634. GHEVs therefore will be commercially infeasible for anything other than niche markets that receive substantial public subsidies. If the Department believes that GHEVs will be a significant factor in manufacturers' compliance plans, it needs to explain why; if not, it should so indicate. [Alliance Written Comments]

Response General Motors (GM) and Toyota have both announced plans to make GHEVs commercially available. GM's Chevy Volt is currently scheduled for initial release in model year 2010, two full years before Arizona's ZEV mandate will take effect. (See http://online.wsj.com/article/SB120468405514712501.html?mod=googlenews_wsj.) In any case, GHEVs represent an alternative compliance option, not a requirement. As in the case of inter-company trading (see response to Comment 52), eliminating this alternative compliance option would in all likelihood violate section 177 of the Clean Air Act.

Comment 54 Arizona must consider investing in a hydrogen fueling and electric charging infrastructure as California has done. If Arizona is unwilling to invest in the necessary infrastructure, it should decline to adopt California's ZEV Mandate in whole. [Alliance Written Comments]

Response As noted in the response to Comment 15, the extension to the "Section 177 Provision" in R18-2-1806(C) is designed to address concerns about the lack of hydrogen fueling infrastructure. No additional infrastructure is needed for electric charging, since planned grid-connected vehicles can be charged from an ordinary domestic outlet.

Assumption of Nationwide Compliance

Comment 55 CARB has assumed that once its greenhouse gas rule is implemented, the automobile industry will choose to deploy the technologies needed to meet the California standards on at least a nationwide (if not global) basis. If CARB's assumption is incorrect, then the costs of the California rule for consumers in California and other states that enforce the California rule will be much higher than estimated by CARB. Because the costs of new regulation is important in Arizona, the Department needs to make an independent assessment of CARB's assumption that the industry will respond to the regulation by producing vehicles that use all the necessary greenhouse gas technologies nationwide. [Alliance Written Comments]

Response As CARB noted in response to a comment by this same commenter, CARB staff did *not* make this assumption. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 156, 174).

Comment 56 As CARB has recognized, the greenhouse gas rule will raise new-vehicle costs and prices, and will also reduce demand for new vehicles. In one regulatory analysis that CARB published prior to its decision to approve the greenhouse gas rule in September 2004, the CARB staff estimated that once the greenhouse gas standards were fully implemented, new-vehicle sales in California would decline by four to five percent. Other estimates predicted larger reductions in sales. It would be illogical and contrary to their customers' interests for automobile manufacturers to produce vehicles for which there is less demand, in the absence of a regulatory requirement to do so. For that reason, it is unlikely that the industry will try to comply with the California greenhouse gas rule by producing all or even most of the necessary technologies at nationwide volumes. [Alliance Written Comments]

Response ADEQ has concluded that the assumptions CARB made in assessing the costs of the GHG regulations were reasonable. See the final EIS for a detailed discussion of the costs of the rule.

Comment 57 The Department also needs to confront serious errors in some analyses of the California rule arising from the technological assessment prepared by the Northeast States Center for a Clean Air Future ("NESCCAF"), on which CARB has relied in part.

First, neither NESCCAF nor the CARB staff has specifically assessed (1) the performance of any specific vehicle actually expected to be in the market when the new rule would take effect or (2) the full range of vehicle types expected in the market. The NESCCAF/CARB analysis was limited to vehicle types that the CARB staff or NESCCAF considered "representative." This point was acknowledged in the CARB staff's Final Statement of Reasons, published in August 2005, which stated that "the agency could not reasonably model all vehicles with all of the potential climate change emission reduction technologies" identified by CARB staff or NESCCAF. The predicted costs and fuel economy impacts of the regulation estimated by the CARB staff and NESCCAF are thus no better than the selection of vehicle types that the CARB staff or NESCCAF considered "representative." [Alliance Written Comments]

The vehicles that the CARB staff and NESCCAF decided to include in their analysis were hardly "representative" of the U.S. motor vehicle fleet, either today or in the future. All or nearly all the vehicles included in the analysis had significantly downsized, turbocharged engines, which sacrifice reserve power, launch feel and some acceleration performance features, and which were based on tests of engines operated on European-specification premium gasoline. The hypothetical vehicles were also equipped with automatic manual transmissions. Such vehicles are hardly typical of the U.S. fleet today or in the future. In particular, it is unrealistic to suppose that in the future, most Americans will buy vehicles designed for optimal performance on gasoline grades higher than regular unleaded. [Alliance Written Comments]

Response The modeling relied on by CARB demonstrated that none of the technologies identified as being capable of complying the GHG standards, including downsized, turbocharged engines, would impair vehicle performance attributes that consumers expect from their vehicle. All of the turbocharger technology packages that CARB considered in developing the GHG standards consisted of combination direct injection gasoline/turbocharger technology, which do not presume a requirement for premium gasoline. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 104, 135, 408).

Comment 58 Second, the principal contractor for the vehicle performance analysis prepared for NESCCAF and then used by CARB, a firm called AVL Powertrain Engineering, has confirmed that it was not asked to undertake, nor did it undertake, any detailed consideration of launch feel, drive quality or the transient response of the engine, transmission and turbocharger, in connection with the work for NESCCAF and CARB. The only reported metric for performance was 0-60 mph acceleration, and it appears the CARB staff ignored available information from AVL involving other acceleration metrics. [Alliance Written Comments]

Response CARB reasonably concluded that modifications to the technology packages modeled by AVL, such as the

use of a downsized direct injection variable geometry turbocharged engine that retains a compression ratio similar to a conventional engine and a 6 speed automated manual transmission, launch feel and acceleration characteristics of the modeled turbocharged applications [would] be similar to engines that were being replaced.

(CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 110).

Comment 59 Some confusion may arise from the fact that the CARB staff has not always fully presented the impact of the regulation on the vehicle powertrain or vehicle performance. For example, the CARB staff's Final Statement of Reasons asserts that in the CARB staff's regulatory analysis, "technology packages that included engine downsizing were not generally considered for the truck classes," and "engine downsizing [was] used primarily for the small car, large car, and minivan vehicle classes where vehicle performance can be maintained under all driving conditions." To the contrary, CARB's regulatory scenario assumed the use of downsized engines for the truck engines included in the CARB analysis. For one set of standards, the large truck engines were assumed to be downsized by 9 to 11 percent. For another set of standards, large truck engines were assumed to be downsized by 11 to 15 percent. Small truck engines were assumed to be downsized by as much as 19 percent. But common sense indicates that truck purchasers are generally not willing to accept downsized engines at the same price as full-size engines. [Alliance Written Comments]

Response As noted above, CARB concluded that engine downsizing accompanied by turbocharging and other technology improvements would provide the performance characteristics consumers expect. There is therefore no reason to believe that consumers will not accept downsized engines in future models capable of meeting the GHG standards. (See response to Comment 57.)

Comment 60 CARB staff's Final Statement of Reasons (FSOR) claims that "[i]n assessing smoothness and refinement ... staff assumed in the analysis that 6 cylinder engines would be replaced by 5 cylinder turbocharged models rather than 4 cylinder versions in order to preserve 6 cylinder-like characteristics." That is incorrect. For the "Large Car" analysis performed for NESCCAF, a three-liter, six-cylinder was replaced by a four-cylinder engine with a much smaller displacement of 1.77 liters. For the "Minivan" case, a 3.3 liter, six-cylinder was replaced by another much smaller 1.85 liter four-cylinder engine. For

the "Small Truck" case in the NESCCAF study, a 3.4 liter six-cylinder engine was replaced by a smaller 1.64 liter four-cylinder. In addition to "smoothness and refinement," engines need sufficient reserve power for responsive acceleration, full cargo loads, towing, and acceptable "launch" at the start of driving. Neither NESCCAF, its contractors, nor the CARB staff, can credibly claim that such radical downsizing would have no impact on consumer demand for the redesigned engines. [Alliance Written Comments]

Response This comment misreads the FSOR. CARB was not claiming that the NESCCAF modeling included 5 cylinder turbocharged models. Rather CARB *staff* considered possible modifications, such as 5 cylinder turbocharged models, and reasonably concluded that these would achieve the desired drivability and performance characteristics. (CARB, "Regulations to Control Greenhouse Gas Emissions from Motor Vehicles: Final Statement of Reasons," Aug. 4, 2007, 110).

Comment 61 In the Final Statement of Reasons, the CARB staff admits that some of the technologies that were evaluated would degrade vehicle performance. The consumer demand model used by California in its analysis, however, assumed no loss in any performance attribute, which is clearly an invalid assumption for the reasons summarized above. The Department therefore cannot appropriately rely on the consumer impacts projected by the CARB staff in the California rulemaking. [Alliance Written Comments]

Response This comment is inaccurate. (See response to Comment 57.)

Other Objections and Concerns

Comment 62 Adopting the rule effectively cedes authority to California regulators. Although the rule would adopt the California standards as of a date certain, the practical reality is that Arizona will be effectively compelled to adopt future changes California may make. [Arizona Chamber; Mazda; ASA; Beebe]

Response This comment is mistaken. If California adopted changes to the LEV II regulations that ADEQ determined to be inappropriate for Arizona, the Department would have the option of repealing the LEV II rules and returning the state to the federal standards.

Comment 63 Statewide emission testing would be preferable to the adoption of the California vehicle standards. [Beebe]

Response Statewide emission testing cannot be adopted by rule, because A.R.S. § 49-541 specifically limits vehicle emission testing to Maricopa County, and portions of Gila, Pima, Pinal and Yavapai Counties. Even if statewide emission testing were adopted, it would not obviate the need to adopt this rule, because it would achieve very little if any reductions in GHG emissions.

Comment 64 The preliminary EIS did not recognize or consider impacts on the automotive aftermarket parts industry. [Auto Wholesalers]

Response Consideration of this impact has been added to the statement.

Comment 65 The EIS should include consideration of the impact on MVD. [MVD]

Response Consideration of this impact has been added to the final statement.

Comment 66 The rulemaking should clarify Clean Car Standard conversion made to vehicle coming to Arizona from a non-certified state. [MVD]

Response Conversions are not permitted under the California rules.

Comment 67 The rulemaking should clarify the complaint process. [MVD]

Response This will be addressed in the implementation phase.

Comment 68 The rulemaking should clarify consequences for failing to comply. [MVD]

Response This is addressed in R18-2-1812 (R18-2-1813 of the proposal).

Comment 69 The rulemaking should clarify non-compliant vehicles purchased by a licensed dealer prior to the effective date of the rule. [MVD]

Response Since the final rule applies to all vehicles with a model year of 2012 and later, this is no longer an issue.

Comment 70 The rulemaking should clarify remedies for a person who has purchased a vehicle that is not eligible for registration as a result of this rulemaking. [MVD]

Response ADEQ will conduct a public education and outreach program to inform citizens about the Clean Car Standards and its applicability to model year 2012 and subsequent vehicles. ADEQ will attempt to assist consumers caught in this situation through the use of its enforcement authority against

dealers and others who may sell non-compliant vehicles with less than 7,500 miles on the odometer. The delay in the rule's effectiveness will provide the time needed to make consumers aware of this issue.

Comment 71 The rulemaking should clarify vehicles repossessed by lienholders. [MVD]

Response It is not clear what is intended by this comment.

12. Any other matter prescribed by statute that is applicable to the specific agency or to any other specific rule or class of rules:

Not applicable.

13. Incorporations by reference and their location in the rules:

Title 13 California Code of Regulations (CCR),	R18-2-1801, R18-2-1803
Section 1900	
Title 13 CCR, Sections 1956.8(g) and (h)	R18-2-1803
Title 13 CCR, Section 1960.1	R18-2-1801, R18-2-1803
Title 13 CCR, Section 1961	R18-2-1801, R18-2-1803, R18-2-1804,
	R18-2-1812
Title 13 CCR, Section 1961.1	R18-2-1801, R18-2-1803, R18-2-1805,
	R18-2-1812
Title 13 CCR, Section 1962	R18-2-1801, R18-2-1803, R18-2-1804,
	R18-2-1812
Title 13 CCR, Section 1962.1	R18-2-1803
Title 13 CCR, Section 1965	R18-2-1803
Title 13 CCR, Section 1968.2	R18-2-1803
Title 13 CCR, Section 1968.5	R18-2-1803
Title 13 CCR, Section 1976	R18-2-1803
Title 13 CCR, Section 1978	R18-2-1803

Title 13 CCR, Section 2035	D10 2 1002 D10 2 1000
	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2037	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2038	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2039	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2040	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2046	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2109	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2111	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2112	R18-2-1803, R18-2-1810
Title 13 CCR, Appendix A to Article 2.1.	R18-2-1803
Title 13 CCR, Section 2113	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2114	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2115	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2116	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2117	R18-2-1803, R18-2-1810
Title 13 CCR Section 2118	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2119	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2120	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2122.	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2123	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2124	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2125	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2126	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2127	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2128	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2129	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2130	R18-2-1803, R18-2-1810

Title 13 CCR, Section 2131	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2132	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2133	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2135	R18-2-1803, R18-2-1810
Title 13 CCR, Section 2141	R18-2-1803
Title 13 CCR, Section 2142	R18-2-1803
Title 13 CCR, Section 2143	R18-2-1803
Title 13 CCR, Section 2144	R18-2-1803, R18-2-1809
Title 13 CCR, Section 2145	R18-2-1803
Title 13 CCR, Section 2146	R18-2-1803
Title 13 CCR, Section 2147	R18-2-1803
Title 13 CCR, Section 2148	R18-2-1803
Title 13 CCR, Section 2149	R18-2-1803
Title 13 CCR, Section 2235	R18-2-1803

<u>14.</u> Were these rules previously made as emergency rules?

No

<u>15.</u> <u>The full text of the rules follows:</u>

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY-

AIR POLLUTION CONTROL

ARTICLE 18. CLEAN CAR STANDARDS

<u>Section</u>	
R18-2-1801	Definitions
R18-2-1802	Applicability
R18-2-1803	Incorporations by Reference
R18-2-1804	Fleet Average Non-Methane Organic Gas (NMOG) Exhaust Emission
	Requirements, Reporting, and Compliance
R18-2-1805	Fleet Average Greenhouse Gas Exhaust Emission Requirements, Reporting and
	Compliance
R18-2-1806	ZEV Sales Requirement
R18-2-1807	ZEV Credit Bank and Reporting
R18-2-1808	Additional Reporting Requirements
R18-2-1809	Warranty Requirements
R18-2-1810	Recalls
R18-2-1811	Inspections and Information Requests
R18-2-1812	Enforcement

ARTICLE 18. CLEAN CAR STANDARDS

R18-2-1801. Definitions

The following definitions, the definitions in R18-2-101, the definitions in A.R.S. § 49-401.01, and the definitions in CCR sections incorporated by reference, apply to this Article unless the context otherwise applies. If the same term is defined more than once, the definitions in this section, R18-2-101 and A.R.S. § 49-401.01 apply first, followed by the definitions in the CCR sections incorporated by reference in R18-2-1803.

- "Advanced technology partial zero emission vehicle" or "ATPZEV" means advanced technology
 Partial Zero Emission Vehicle as defined in CCR § 1962(i).
- 2. "Affected vehicle" means any passenger car, light duty truck or medium duty vehicle with 7,500 miles or fewer on its odometer, provided that a vehicle sold by a dealer is an affected vehicle if it had 7,500 miles or fewer on its odometer statement at the time the dealer acquired the vehicle.
- 3. "Assembled vehicle" means:
 - a. A motor vehicle that has a body built to resemble and be a reproduction of another
 vehicle of a given year and given manufacturer;
 - A motor vehicle that will be used for occasional transportation, exhibitions, club
 activities, parades, tours, testing its operation, repairs or maintenance and similar uses;
 - c. A motor vehicle that will not be used for general daily transportation; or
 - d. A motor vehicle that:
 - i. Has a body that does not resemble any particular year model or make of vehicle;
 - ii. Is not a vehicle rebuilt by a manufacturer;
 - iii. Is not a vehicle built in a factory where the year model and make are assigned at the factory; and
 - iv. Is not an antique vehicle, a vehicle of special interest, a reconstructed vehicle or a replica.
- 4. "Business" means an occupation, profession or trade; a person or partnership or corporation engaged in commerce, manufacturing, or a service; a profit-seeking enterprise or concern.
- 5. "California Air Resources Board" or "CARB" means the agency or its successor established and empowered to regulate sources of air pollution in the state of California, including motor vehicles.

- 6. "California credit balance" means the balance of credits that a manufacturer has on deposit with the California ZEV Bank on January 2, 2008.
- 7. "CCR" means Title 13 of the California Code of Regulations as in effect on January 1, 2008, and no future editions or amendments.
- 8. "Certificate of conformity" means a document issued by California Air Resources Board certifying that a specified test group or model year has met all applicable requirements adopted by CARB under the applicable sections of CCR, or by the United States EPA under the applicable sections of the Clean Air Act, for the control of specified air contaminants from motor vehicles.
- 9. "Collectible vehicle" means a vehicle that complies with both of the following:
 - a. It is a motor vehicle that:
 - i. Bears a model year date of original manufacture that is at least fifteen years old;
 or
 - ii. Is of unique or rare design, of limited production and an object of curiosity.

b. It is a motor vehicle that:

- i. Is maintained primarily for use in car club activities, exhibitions, parades or other
 functions of public interest or for a private collection and is used only
 infrequently for other purposes; and
- ii. Has a collectible vehicle or classic automobile insurance coverage that restricts the collectible vehicle mileage or use, or both, and requires the owner to have another vehicle for personal use.

10. "Custom Vehicle" means:

- a. <u>A motor vehicle that:</u>
 - Was manufactured prior to 1949 or was manufactured to resemble a motor vehicle manufactured prior to 1949;
 - ii. May be equipped with a drive train, suspension system or brake system that is different from the drive train, suspension system or brake system originally installed on the vehicle;
 - iii. May have alterations to the dimensions of the original body of the vehicle; and
 - iv. Is not a motorcycle or an assembled vehicle; or
- b. A motor vehicle that was manufactured to resemble a vehicle at least twenty-five (25) years old and of a model year after 1948, and:
 - i. Has been altered from the manufacturer's original design; or
 - ii. Has a body constructed from non-original materials.

- 11. "Dealer" means a person or organization licensed under A.R.S. § 28-433 by the Arizona

 Department of Transportation as a new motor vehicle dealer, or used motor vehicle dealer.
- 12. "Delivered for sale" means vehicles that have received a bill of lading for sale in Arizona and are shipped, or are in the process of being shipped, to a dealer in Arizona.
- 13. "Department" means the Arizona Department of Environmental Quality.
- 14. "Emergency vehicle" means any publicly owned vehicle operated by a peace officer in the performance of their duties, any authorized emergency vehicle used for fighting fires or responding to emergency fire calls and any publicly owned authorized emergency vehicle used by an emergency medical technician or paramedic or any ambulance used by a private entity under contract with a public agency.
- 15. "Engine family" means the basic classification unit comprised of the engine and drive train configuration selected by a manufacturer and used for the purpose of certification testing.
- 16. "Executive Order" means a document issued by the CARB certifying that a specified test group or model year vehicle has met all applicable requirements adopted by the CARB under the applicable sections of CCR for the control of specified air contaminants from motor vehicles and is thereby certified for sale in California.
- 17. "Fleet average emission requirements" means limitations on greenhouse or non-methane organic gas exhaust mass emissions from passenger cars, light-duty trucks and medium-duty passenger vehicles.
- 18. "Greenhouse gas" or "GHG" means the following gases: carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.
- 19. "Greenhouse gas emission credit" means the value, earned by a manufacturer when the manufacturer's greenhouse gas fleet average emissions are less than the required fleet average, as determined by the formula in CCR § 1961.1(b).
- 20. "Greenhouse gas emission debit" means the value, earned by a manufacturer when the manufacturer's greenhouse gas fleet average emissions exceed the required fleet average, as determined by the formula in CCR § 1961.1(b).
- 21. "Greenhouse gas fleet average emissions" means a motor vehicle manufacturer's average vehicle emissions of greenhouse gases from passenger cars and light duty trucks in any model year subject to this regulation delivered for sale in Arizona.
- 22. "Greenhouse gas fleet average emission requirement" means limitations on greenhouse gas exhaust mass emissions from passenger cars, light-duty trucks and medium-duty passenger vehicles, as set forth in CCR § 1961.1.

- 23. "Greenhouse gas model year" or "GHG model year" is defined as follows:
 - a. If Congress amends federal law to allow state adoption of the GHG standards in CCR §
 1961.1 and the amendment establishes an earliest model year to which the standards may apply, GHG model year means the model year established in that amendment.
 - b. If Congress does not adopt the amendment described in subsection (b), GHG model year means the model year commencing two years after EPA grants a waiver under section 209(b) of the Clean Air Act for the standards established by CCR § 1961.1 or after any judicial decision or amendment to federal law that has the effect of authorizing states to adopt the GHG standards in CCR § 1961.1.
- 24. "Gross vehicle weight rating" or "GVWR" means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.
- 25. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.
- 26. "Independent low volume manufacturer" means a manufacturer that has been designated by CARB as an independent low volume manufacturer as defined at CCR § 1900.
- 27. "Intermediate volume manufacturer" means a manufacturer that has been designated by CARB as an intermediate volume manufacturer as defined at CCR § 1900.
- 28. "Large volume manufacturer" means a manufacturer that has been designated by CARB as a large volume manufacturer as defined at CCR § 1900.
- 29. "Light-duty truck" means any 2000 and subsequent model year motor vehicle certified to the standards in CCR § 1961(a)(1), rated at 8,500 pounds gross vehicle weight or less, and any other motor vehicle rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.
- 30. "Manufacturer" means any small, intermediate, or large volume vehicle manufacturer as defined at CCR § 1900.
- 31. "Medium-duty passenger vehicle" means any medium-duty vehicle with a gross vehicle weight rating of less than 10,000 pounds that is designed primarily for the transportation of persons, but does not include:
 - a. A truck that does not have the primary load carrying device or container attached;
 - b. A vehicle that has a seating capacity of more than 12 persons;
 - c. A vehicle that is designed for more than 9 persons in seating rearward of the driver's seat;

or

d. A vehicle that is equipped with an open cargo area of 72.0 inches in interior length or more. A covered box not readily accessible from the passenger compartment shall be considered an open cargo area, for purposes of this definition.

32. "Medium-duty vehicle means:

- a. Any pre-1995 model year heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8,500 pounds or less;
- b. Any 1992 through 2006 model-year heavy-duty low-emission, ultra-low-emission, superultra-low-emission or zero-emission vehicle certified to the standards in CCR § 1960.1(h)(2) having a manufacturer's gross vehicle weight rating of 14,000 pounds or less; and
- c. Any 2000 and subsequent model heavy-duty low-emission, ultra-low-emission, superultra-low-emission or zero-emission vehicle certified to the standards in CCR § 1961(a)(1) or 1962 having a manufacturer's gross vehicle weight rating between 8,501 and 14,000 pounds.
- 33. "Model year" means a motor vehicle manufacturer's annual production period which includes

 January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar

 year. In case any vehicle manufactured in two or more stages, the item of manufacture shall be
 the date of completion of the chassis.
- 34. "Motor vehicle" or "vehicle" means any self-propelled vehicle designed for transporting persons or property on public highways, excepting motorcycles.
- 35. "Motor vehicle engine" means an engine that is used to propel a motor vehicle.
- 36. "New motor vehicle engine" means a new engine in a motor vehicle.
- 37. "Non-methane organic gas" or "NMOG" means the sum of non-oxygenated and oxygenated hydrocarbons contained in a gas sample as measured in accordance with the "California Non-Methane Organic Gas Test Procedures," as amended July 30, 2002, with no future editions or amendments, which is incorporated herein by reference and is on file with the Department.
- 38. "Non-methane organic gas (NMOG) emission credit" means the value, earned by a manufacturer when the manufacturer's non-methane organic gas fleet average emissions is less than the required fleet average, as determined by the formula in CCR § 1961(c).
- 39. "Non-methane organic gas (NMOG) emission debit" means the value, earned by a manufacturer when the manufacturer's non-methane organic gas fleet average emissions exceeds the required fleet average, as determined by the formula in CCR § 1961.(c).

- 40. "Non-methane organic gas (NMOG) fleet average emission" means a motor vehicle manufacturer's average vehicle emissions of all non-methane organic gases from passenger cars and light duty trucks in any model year subject to this regulation delivered for sale in Arizona.
- 41. "Non-methane organic gas (NMOG) fleet average emission requirement" means limitations on non-methane organic gas exhaust mass emissions from passenger cars, light-duty trucks and medium-duty passenger vehicles, as set forth in CCR § 1961.
- 42. "Partial zero emission vehicle" or "PZEV" means a vehicle that is certified as a partial zero emission vehicle under the CARB vehicle standards for the applicable model year and has received a CARB Executive Order, but shall not include an advanced technology partial zero emission vehicle or a zero emission vehicle.
- 43. "Passenger car" or "PC" means any motor vehicle designed primarily for transportation of individuals and having a design capacity of 12 individuals or fewer.
- 44. "Person" means the federal government, state, or any federal or state agency or institution, any municipality, political subdivision, public or private corporation, individual, partnership, association, or other entity, and includes any officer or governing or managing body of any municipality, political subdivision, or public or private corporation.
- 45. "Placed in service" means having been sold to an ultimate purchaser and not to a dealer or other distribution chain entity, and having been individually registered for on-road use by the Arizona Motor Vehicle Division.
- 46. "Recall" means"
 - a. The issuing of notices directly to consumers that vehicles in their possession or control should be corrected, or
 - b. Efforts to actively locate and correct vehicles in the possession or control of consumers.
- 47. "Sale" or "sell" means the transfer of equitable or legal title to a motor vehicle or motor vehicle engine to the ultimate purchaser.
- 48. "Small volume manufacturer" means a manufacturer that has been designated by the CARB as a small volume manufacturer as defined at CCR § 1900.
- 49. "State" means the State of Arizona.
- 50. "Test group" means a grouping of vehicles as defined by 40 CFR 86.1827-01 as of July 1 2006, incorporated herein by reference with no future editions or amendments.
- Test vehicle" means an experimental or prototype motor vehicle that appears to have very low emission characteristics, or a used motor vehicle within which an experimental motor vehicle pollution control device is installed, and which has also received a test vehicle or fleet permit from the CARB.

- 52. "Ultimate purchaser" means, with respect to any affected vehicle or new motor vehicle engine, the first person who in good faith purchases an affected vehicle or new motor vehicle engine for purposes other than resale.
- 53. "Vehicle identification number" or "VIN" means a unique alphanumeric code that the vehicle manufacturer assigns to a vehicle.
- 54. "Zero emission vehicle" or "ZEV" means a vehicle certified as a zero emission vehicle under to the CARB zero emission vehicle standards for the applicable model year, but shall not include an advanced technology partial zero emission vehicle or a partial zero emission vehicle.

R18-2-1802. Applicability

- A. Except as set forth in subsection (D), no dealer or other person within this State shall deliver for sale, offer for sale, sell, import, deliver, purchase, rent, lease, acquire, receive, or register an affected vehicle of model year 2012 or later unless the vehicle has been certified by CARB and has received a CARB Executive Order.
- B. All motor vehicle manufacturers shall comply with the fleet average emission requirements and the warranty, recall, and other applicable requirements of this Article.
- C. All motor vehicle dealers shall comply with the sales and reporting requirements of this Article.
- **D.** Subsection (A) shall not apply to affected vehicles that are:
 - Available only for rent to a final destination in a state that is not subject to the California vehicle emissions standards;
 - Sold for registration and use in a state that is not subject to the California vehicle emission standards;
 - Purchased by Arizona residents while assigned to active military duty outside the State of Arizona;
 - 4. Military tactical vehicles, test vehicles and emergency vehicles;
 - 5. Acquired by a resident of Arizona for the purposes of replacing a vehicle registered to that resident, which was damaged, or became inoperative beyond reasonable repair, or was stolen while out of Arizona; provided that the replacement vehicle is acquired out of State at the time the previously registered vehicle was either damaged or became inoperative beyond reasonable repair or was stolen;
 - 6. Transferred as a result of divorce, dissolution, legal separation, court decree, or inheritance;
 - 7. Collectible vehicles, custom vehicles, or assembled vehicles;

- 8. Covered by a certificate of conformity issued under the Clean Air Act and that were originally registered in another state by a resident of that state who subsequently establishes residence in Arizona;
- 9. Sold for the purpose of being wrecked or dismantled under A.R.S. § 28-2094 and A.A.C. R17-203(A)(1)(d)(i); or
- 10. Sold exclusively for off-highway use.

R18-2-1803. Incorporations by Reference.

The following sections of CCR, as of January 1, 2008, and no future editions or amendments, are incorporated by reference and are on file with the Department. For purposes of applying the incorporated sections of CCR, "California" means "Arizona," and "Air Resources Board (ARB)" or "California Air Resources Board (CARB)" means the Arizona Department of Environmental Quality (ADEQ) unless otherwise specified. Each manufacturer of new 2011 and subsequent model year passenger cars, light duty trucks, and medium duty vehicles shall comply with each applicable standard specified in CCR as incorporated by reference herein:

- **A.** Section 1900: Definitions.
- B. Section 1956.8(g) and (h): Exhaust Emission Standards and Test Procedures 1985 and Subsequent Model Heavy Duty Engines and Vehicles.
- C. Section 1960.1: Exhaust Emission Standards and Test Procedures 1981 and through 2006 Model
 Passenger Cars, Light-Duty and Medium-Duty Vehicles.
- D. Section 1961: Exhaust Emission Standards and Test Procedures 2004 and Subsequent Model
 Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles.
- E. Section 1961.1: Greenhouse Gas Exhaust Emission Standards and Test Procedures 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles.
- F. Section 1962: Zero-Emission Vehicle Standards for 2005 and Subsequent Model Passenger Cars,

 <u>Light-Duty Trucks and Medium-Duty Vehicles.</u>
- **G.** Section 1962.1: Electric Vehicle Charging Requirements.
- H. Section 1965: Emission Control and Smog Index Labels 1979 and Subsequent Model Year Vehicles.
- I. Section 1968.2: Malfunction and Diagnostic System Requirements 2004 and Subsequent Model
 Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles.
- J. Section 1968.5: Enforcement of Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines.

- **K.** Section 1976: Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions.
- L. Section 1978: Standards and Test Procedures for Vehicle Refueling Emissions.
- M. Section 2035: Purpose, Applicability and Definitions.
- N. Section 2037: Defects Warranty Requirements for 1990 and Subsequent Model Year Passenger
 Cars, Light-Duty Trucks and Medium-Duty Vehicles and Motor Vehicle Engines Used in Such Vehicles.
- O. Section 2038: Performance Warranty Requirements for 1990 and Subsequent Model Year

 Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles and Motor Vehicle Engines Used in Such.
- **P.** Section 2039: Emission Control System Warranty Statement.
- **Q.** Section 2040: Vehicle Owner Obligations.
- **R.** Section 2046: Defective Catalyst.
- Section 2109: New Vehicle Recall Provisions.
- T. Section 2111: Applicability.
- U. Section 2112: Definitions.
- V. Appendix A to Article 2.1.
- W. Section 2113: Initiation and Approval of Voluntary and Influenced Recalls.
- **X.** Section 2114: Voluntary and Influenced Recall Plans.
- **Z**. Section 2115: Eligibility for Repair.
- **AA.** Section 2116: Repair Label.
- **BB.** Section 2117: Proof of Correction Certificate.
- **CC.** Section 2118: Notification.
- **DD.** Section 2119: Record keeping and Reporting Requirements.
- **EE.** Section 2120: Other Requirements Not Waived.
- **FF.** Section 2122: General Provisions.
- **GG.** Section 2123: Initiation and Notification of Ordered Emission-Related Recalls.
- **HH.** Section 2124: Availability of Public Hearing.
- **II.** Section 2125: Ordered Recall Plan.
- **JJ.** Section 2126: Approval and Implementation of Recall Plan.
- **KK.** Section 2127: Notification of Owners.
- LL. Section 2128: Repair Label.
- MM. Section 2129: Proof of Correction Certificate.
- NN. Section 2130: Capture Rates and Alternative Measures.
- **OO.** Section 2131: Preliminary Tests.

- **PP.** Section 2132: Communication with Repair Personnel.
- **QQ.** Section 2133: Record keeping and Reporting Requirements.
- **RR.** Section 2135: Extension of Time.
- SS. Section 2141: General Provisions.
- **TT.** Section 2142: Alternative Procedures.
- **UU.** Section 2143: Failure Levels Triggering Recall.
- **VV.** Section 2144: Emission Warranty Information Report.
- **WW.** Section 2145: Field Information Report.
- **XX.** Section 2146: Emissions Information Report.
- **YY.** Section 2147: Demonstration of Compliance with Emission Standards.
- **ZZ.** Section 2148: Evaluation of Need for Recall.
- AAA. Section 2149: Notification of Subsequent Action.
- **BBB.** Section 2235: Requirements.

R18-2-1804. Fleet Average Non-Methane Organic Gas (NMOG) Exhaust Emission Requirements, Reporting, and Compliance.

- A. Beginning in model year 2012, each motor vehicle manufacturer's NMOG fleet average emissions from passenger cars and light duty trucks delivered for sale in Arizona shall not exceed the Fleet Average NMOG Exhaust Emission Requirement in CCR § 1961. The Department shall determine compliance based on the number of vehicles, subject to this Article, delivered for sale in the State of Arizona.
- Beginning model year 2012, each vehicle manufacturer may accrue NMOG emission credits and debits and use credits in accordance with the procedures in California Code of Regulations, Title 13, section 1961. Debits and credits accrued and used shall be based on the number of vehicles, subject to this Article, produced and delivered for sale by each manufacturer in Arizona.
- C. Beginning model year 2012, each manufacturer shall submit to the Department by March 1 a report on end-of-model year data that calculates the fleet average NMOG exhaust emissions for the model year just ended.
- Each manufacturer submitting a report under subsection (C) shall follow the report procedures in
 CCR § 1961 and shall employ the same format that the manufacturer uses to report the
 information required by subsection (C) to the California Air Resources Board.
- E. Beginning model year 2014, if a report submitted by the manufacturer under subsection (C) shows that the manufacturer has not complied with the fleet average emission standard, the

- manufacturer shall submit to the Department a Fleet Average Remediation Report within 60 days. In the Fleet Average Remediation Report, the manufacturer shall:
- 1. Describe how the manufacturer intends to equalize any accrued debits, as required in CCR § 1961;
- 2. Identify all vehicle models delivered for sale in Arizona, their corresponding certification standards, and the percentage of each model delivered for sale in Arizona and California in relation to total fleet sales in the respective state; and
- 3. Describe how the manufacturer plans to achieve compliance with the fleet average in future model years.
- For model years 2012 through 2014, manufacturers shall submit the Fleet Average Remediation

 Report, if needed, to the Department by March 1, 2015. If debits are accrued in all three years, the

 manufacturer shall equalize one year of debits by the end of the 2015 model year, and the

 remaining two years of debits by the end of the 2016 model year.

R18-2-1805. Fleet Average Greenhouse Gas Exhaust Emission Requirements, Reporting and Compliance

- A. Beginning in the GHG model year, each manufacturer shall comply with fleet average greenhouse gas exhaust mass emission requirements for passenger car, light duty truck, medium-duty passenger vehicle weight classes, and other requirements of CCR § 1961.1.
- B. Greenhouse gas emission credits and debits. Each manufacturer may accrue greenhouse gas credits and debits and use credits in accordance with the procedures in California Code of Regulations, Title 13, section 1961.1. Debits and credits accrued and used shall be based on the number of vehicles, subject to this Article, produced and delivered for sale by each manufacturer in Arizona.
- C. Optional alternative compliance with greenhouse gas emission standards. Greenhouse gas vehicle test groups that are certified under CCR § 1961.1(a)(1)(B)2.a. in the State of California may receive equivalent credit, according to CCR § 1961.1(a)(1)(B)2.a, if:
 - 1. The vehicle test group is delivered for sale and use in the State of Arizona, and
 - 2. The manufacturer of the vehicle test group submits to the Department the information required by CCR § 1961.1(a)(1)(B)2.a.i.
- P. Reporting on greenhouse gas requirements. Beginning March 1 of the GHG model year, each manufacturer shall submit a report to the Department that includes:
 - Pre-model year data that projects the fleet average greenhouse gas emissions for vehicles
 expected to be delivered for sale in Arizona and

- 2. End-of-model year data that calculates the fleet average greenhouse gas emissions for the model year just ended.
- Each manufacturer submitting a report under subsection (D) shall include in the report the number of greenhouse gas vehicle test groups, delineated by model type, certified under CCR § 1961.1. Each manufacturer shall follow the report procedures in CCR § 1961.1 and employ the same format used to report the information required by subsection (D) to the California Air Resources Board.
- E. Beginning in the GHG model year, if the report submitted by the manufacturer under subsection (D)(2) shows that the manufacturer has not complied with the fleet average emission standards, the manufacturer shall submit to the Department a Fleet Average Remediation Report within 60 days. In the Fleet Average Remediation Report, each manufacturer shall:
 - 1. Describe how the manufacturer intends to equalize any accrued debits, as required in CCR § 1961.1;
 - 2. Identify all vehicle models delivered for sale in Arizona, their corresponding certification standards, and the percentage of each model delivered for sale in Arizona and California in relation to total fleet sales in the respective state; and
 - 3. Describe how the manufacturer plans to achieve compliance with the fleet average in future model years.
- G. Adoption of this section is conditioned, and shall take effect immediately, on EPA's approval of a waiver for CCR § 1961.1 under section 209(b) of the Clean Air Act or on any judicial decision or change to federal law that has the effect of authorizing states to adopt the GHG standards in CCR § 1961.1.

R18-2-1806. ZEV Sales Requirement

- A. Beginning model year 2012, each manufacturer shall comply with the ZEV sales requirement in CCR § 1962, including early credit and banking provisions.
- B. An intermediate volume or large volume manufacturer of ZEVs, ATPZEVs and PZEVs may use vehicle equivalent credits according to CCR § 1962, to offset the ZEV Sales Requirement of subsection (A).
- C. The provisions of CCR § 1962(d)(5)(D) regarding "Counting a Type III ZEV Placed in a Section 177 State" shall not end with the 2011 model year, but shall continue in Arizona throughout the duration of the alternate compliance path specified in CCR § 1962(b)(2)(B), except that this subsection shall not apply until three years after the Director finds the following conditions are met:

- 1. The number of Type III ZEVs required to meet the minimum floor requirements in CCR § 1962(b)(2)(B)(1) between the years 2013 and 2018 is proportioned among all states that have adopted California's vehicle emission standards; and
- 2. Arizona's hydrogen refueling infrastructure is adequate to accommodate the number of Type III ZEVs needed to meet the minimum floor requirements of CCR § 1962(b)(2)(B)1 between 2013 and 2018.

R18-2-1807. ZEV Credit Bank and Reporting

- A. Beginning model year 2012, the Department shall create and operate a Zero-Emission Vehicle Credit Bank.
- Beginning model year 2012, each intermediate volume and large volume manufacturer of ZEVs, ATPZEVs and PZEVs shall open an account in the ZEV credit bank by January 1, 2012, except that to generate and deposit credits for vehicles delivered for sale in Arizona during the 1999 through 2008 model years, a manufacturer shall:
 - 1. Open an account with the ZEV Credit Bank, and
 - 2. Submit an appropriate Notice of Generation to the Department by September 1, 2009.
- C. Beginning in model year 2012, except as provided in subsection (B) for model years 1999

 through 2008, each manufacturer shall submit to the Department a Notice of Credit Generation or

 Notice of Credit Transfer to or from another manufacturer, by September 1 following the close of
 the model year in which the qualifying vehicle was produced and delivered for sale in Arizona.
- **D.** To open an account with the ZEV credit bank, the manufacturer shall submit to the Department an account application form containing the following information:
 - 1. The manufacturer's name;
 - 2. The manufacturer's mailing address;
 - 3. The manufacturer's telephone number;
 - 4. Type of business (if applicable);
 - 5. The authorized representative's name, title, phone number, fax number and email address; and
 - 6. The authorized representative's signature.
- **E.** When the Department receives a complete account application, the Department shall issue a unique identifier for the account and notify the account applicant of the identifier.
- F. To deposit credits into the ZEV Credit Bank, each manufacturer shall submit a Notice of Credit

 Generation to the Department on a form provided by the Department.
 - 1. The Notice of Credit Generation for ZEVs delivered for sale in Arizona shall include:

- a. The manufacturer's ZEV Credit Bank account identifier;
- b. The model year of the vehicle qualifying for credit;
- c. The CARB Executive Order number;
- d. The ZEV Tier type (NEV, 0, I, II, III for California, III for Section 177 states);
- e. The vehicle identification number; and
- f. The date the vehicle was delivered for sale in Arizona.
- 2. The Notice of Credit Generation for ZEVs placed in service in Arizona shall include:
 - a. All information listed under subsection (D)(1);
 - b. The date the vehicle was placed in service; and
 - c. Whether the vehicle was placed in service with an option to purchase or lease the vehicle;
- 3. The Notice of Credit Generation For ATPZEVs and PZEVs delivered for sale in Arizona shall include:
 - a. The vehicle certification class (ATPZEV or PZEV);
 - b. The manufacturer's ZEV Credit Bank account identification;
 - c. The model year of the vehicles;
 - d. The date the vehicle was delivered for sale in Arizona;
 - e. For ATPZEVs, the federal test group;
 - f. The CARB executive order number; and
 - g. The number of vehicles delivered.
- G. The number of the credits generated and deposited for each qualifying vehicle shall be the number of qualifying vehicles multiplied by the applicable multiplier set forth in Title 13 of the California Code of Regulations, Section 1962, except that the multiplier applied to vehicles produced and delivered for sale in Arizona from January 1, 1999, to January 13, 2004, shall be the highest applicable multiplier used by CARB for the period January 1, 1999, to January 13, 2004.
- **H.** A vehicle equivalent credit does not constitute or convey a property right.
- I. A manufacturer with an account in the ZEV Credit Bank may acquire credits from another manufacturer with an account in the ZEV Credit Bank; however, if the credits are to be used for future compliance with the ZEV sales requirement in CCR § 1962, both parties to the transaction shall certify the transaction and record it in the ZEV Credit Bank.
- J. For each acquisition of credits transferred to or from another manufacturer, each manufacturer
 shall submit a Notice of Credit Transfer to the Department on a form provided by the Department
 that includes:

- 1. The date of the credit transfer;
- 2. The model year the credits were generated;
- 3. The type of vehicle (NEV, ZEV type, ATPZEV or PZEV); and
- 4. The number of credits in grams/mile NMOG.
- K. A manufacturer may deposit into its account in the ZEV Credit Bank a number of credits equal to its California credit balance at the beginning of the 2012 model year. The manufacturer shall multiply the transferred credit balance by the number of affected vehicles registered in Arizona, and divide by the number of affected vehicles registered in California. The proportion of affected vehicles in Arizona and California shall be determined by the average number of vehicles registered in model years 2005 through 2007, or by the average number of vehicles registered in model year 2011. The manufacturer may deposit the credits only after all credit obligations in California for model years 2010 and earlier have been satisfied.
- L. The Department shall verify all credits and, if discrepancies are found, shall notify the manufacturer and adjust the account. The Department may audit an account at any time.
- M. Each manufacturer with a ZEV Credit Bank account shall report to the Department the following information:
 - 1. By May 1, 2012, the total number of PC and LDT1 vehicles produced and delivered for sale in Arizona and California for the 2006 through 2008 model years; or
 - 2. By May 1, 2012, the total projected number of PC and LDT1 vehicles to be produced and delivered for sale in Arizona and California during model year 2012 and, by March 1, 2013, the actual number of 2012 model year PC and LDT1 vehicles produced and delivered for sale in Arizona and California; and
 - 3. By May 1, 2012, the total number of banked California credits after all 2011 model year and earlier obligations have been met.
- N. A manufacturer electing to deposit credits under subsection (K), shall offer for sale in Arizona in model years 2012 through 2014 any PZEV, ATPZEV or ZEV, except Type III ZEVs, that it offers for sale in California during the same period.

R18-2-1808. Additional Reporting Requirements

A. For each engine family to be sold in the State of Arizona, within thirty days of the Department's request, a manufacturer shall submit to the Department one copy of the California Executive Order and one copy of the Certificate of Conformity for certification of affected vehicles. If the reports are available electronically, the manufacturer may send them in an electronic format.

B. The Department may require any vehicle manufacturer to submit any documentation the

Department deems necessary for the administration and enforcement of this Article, including all certification materials submitted to CARB.

R18-2-1809. Warranty Requirements

- A. Beginning model year 2012 for all vehicles subject to this Article, each manufacturer shall provide a warranty to the ultimate purchaser and each subsequent purchaser that complies with the requirements in CCR §§ 2035 through 2038, 2040 and 2046.
- B. The 15-year or 150,000-mile extended warranty specified in CCR § 1962(c)(2)(D) for PZEVs is not included as a requirement of this rule or of R18-2-1811, provided that PZEVs delivered for sale to Arizona are equipped with the same quality components as PZEVs supplied to areas where the full 15-year or 150,000-mile warranty remains in effect. This Section does not amend the requirements of CCR § 1962(c)(2)(D) that indicate the warranty period for a zero emission energy storage device used for traction power will be 10 years.
- C. Beginning model year 2012, each manufacturer shall include the emission control system warranty statement, for all vehicles subject to this Article, that complies with the requirements in CCR § 2039. Manufacturers may modify this statement as necessary to inform Arizona vehicle owners of the warranty's applicability. The manufacturer shall provide a telephone number that Arizona consumers can use to obtain warranty information.
- D. A manufacturer shall submit Failure of Emission-Related Components reports for vehicles subject to this rule, as defined in CCR § 2144, upon the Department's request. Manufacturers may submit copies of the Failure of Emission-Related Components reports that are submitted to the California Air Resources Board instead of submitting reports for vehicles subject to this Article.

R18-2-1810. Recalls

- A. The Department shall consider any order issued or enforcement action taken by CARB that results in the recall of any vehicle under CCR §§ 2109-2135, to be prima facie evidence of noncompliance for applicable vehicles registered in Arizona. If the manufacturer can demonstrate that the order or action is not applicable to vehicles registered in Arizona, the Department shall not pursue a recall of vehicles registered in Arizona.
- B. Any emission-related recall campaign initiated by any manufacturer under CCR §§ 2113-2121 shall extend to all applicable vehicles registered in Arizona. If the manufacturer can demonstrate that the recall campaign is not applicable to vehicles registered in Arizona, the campaign shall not apply in Arizona.

C. For vehicles subject to an order of enforcement action under subsection (A), each manufacturer shall send to owners of vehicles registered in the State of Arizona a notice that complies with the requirements in CCR § 2118 or 2127. The manufacturer shall provide a telephone number that Arizona consumers can use to obtain information about any recall that affects Arizona vehicles.

R18-2-1811. Inspections and Information Requests

- A. The Department may inspect new and used motor vehicles and related records to determine compliance with the requirements of this Article. Department inspections shall occur during regular business hours and on any premises owned, operated or used by any dealer or rental car agency for the purposes of determining compliance with this Article.
- B. The Department may require any vehicle dealer or rental car agency to submit any documentation the Department deems necessary to the effective administration and enforcement of this division.

 The Department shall not require creation of new records.

R18-2-1812. Enforcement

- A. Each vehicle that fails to comply with the standards established by this Article shall constitute a distinct violation for purposes of A.R.S. § 49-463.
- B. When a manufacturer fails to comply with section R18-2-1804, the number of out-of-compliance vehicles shall be calculated in accordance with CCR § 1961(c)(3)(A).
- C. When a manufacturer fails to comply with section R18-2-1805, the number of out-of-compliance vehicles shall be calculated in accordance with CCR § 1961.1(b)(3)(A).
- D. When a manufacturer fails to comply with this section R18-2-1807, the number of out-of-compliance vehicles shall be calculated in accordance with CCR § 1962(g)(8).